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AUGUST, 1954

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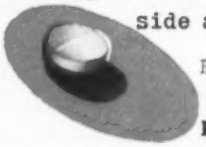

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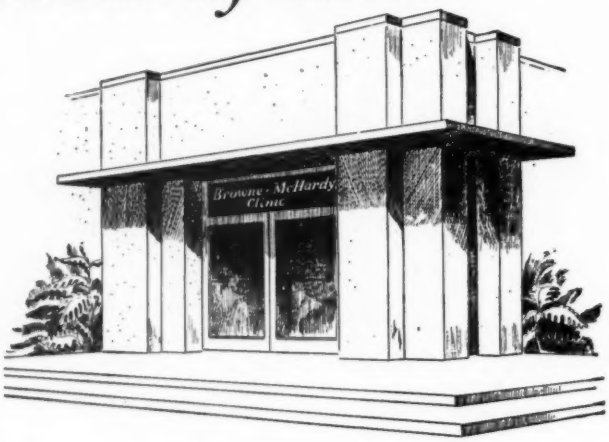

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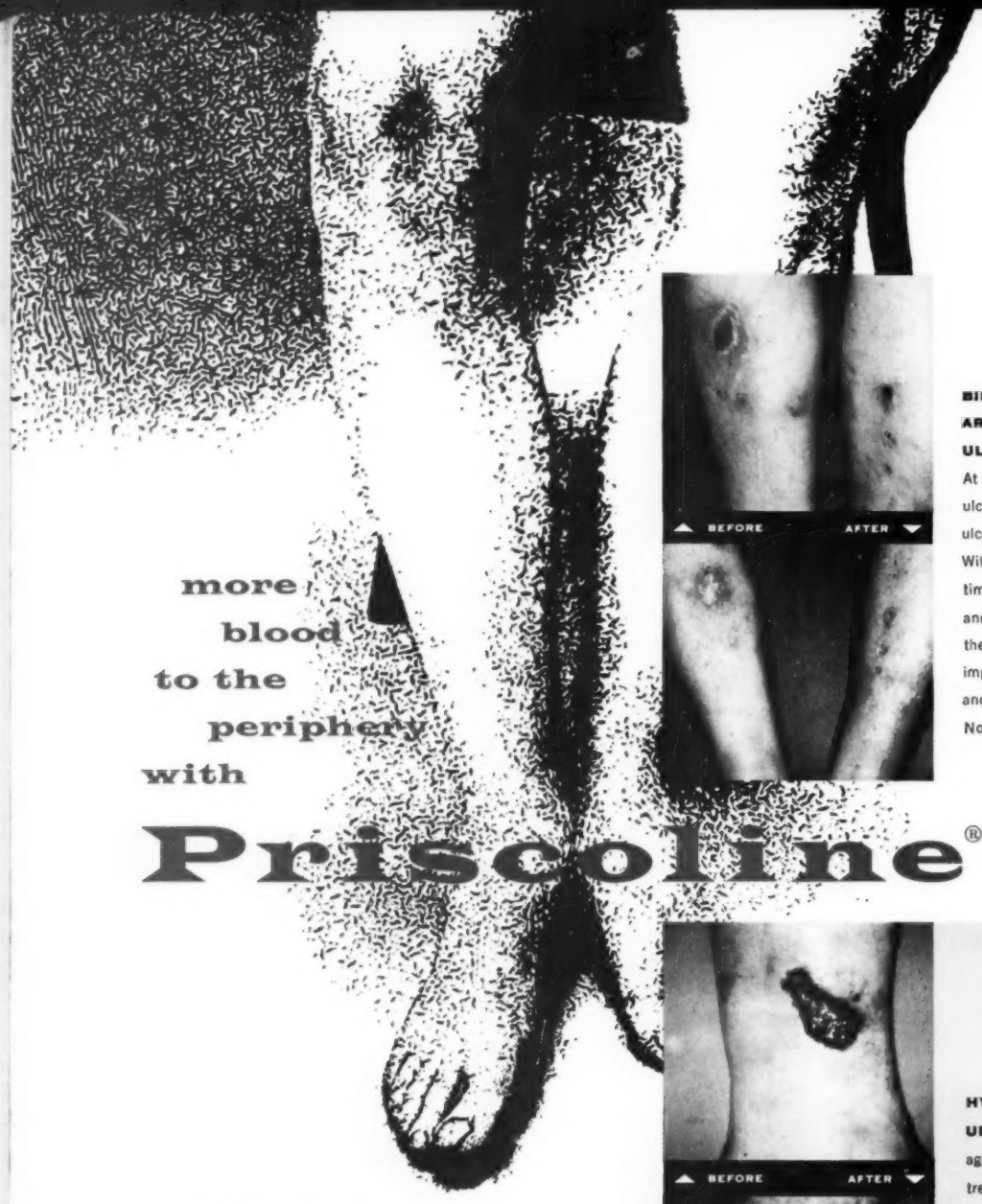

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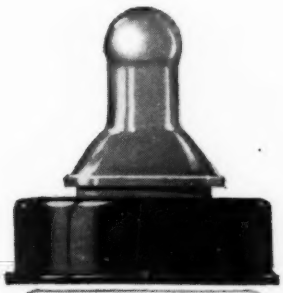

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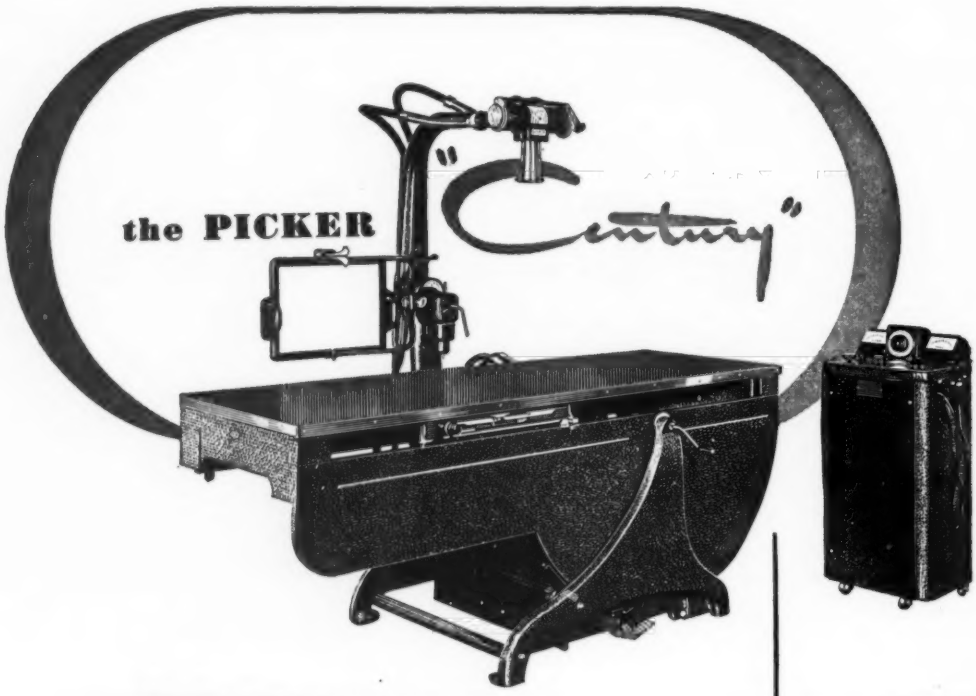

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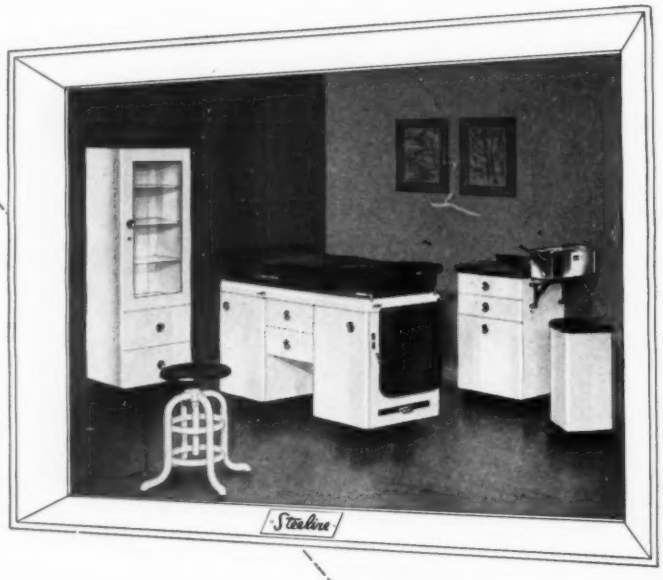

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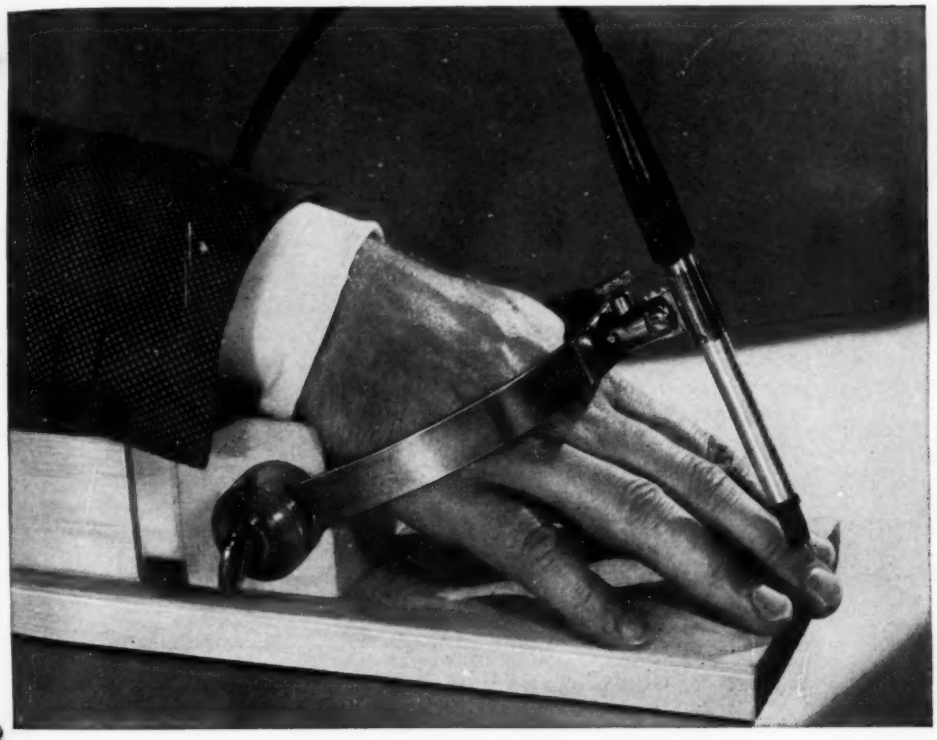

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ATYPICAL SYMPTOMS FROM RENAL NEOPLASMS *

C. D. CREEVY, M. D. †
MINNEAPOLIS, MINN.

To avoid confusion, I will limit my remarks to malignant parenchymal neoplasms of the kidney in the adult. The nomenclature of these lesions has been briskly debated, and has involved confusion of the terms hypernephroma, nephroma, clear and granular celled carcinoma, adenocarcinoma, sarcoma, etc. One may minimize misunderstanding by adopting Wilson's view that the basic cell of the parenchymal neoplasm is that of the nephrogenic mesenchyme. Since it resembles embryonic connective tissue but develops into mature renal tubular epithelium, it gives rise to a variety of histological appearances. While "nephroma" best expresses this attitude, the term hypernephroma is so widely used and euphonious that it will undoubtedly continue to be the most popular name for these tumors. Most of them grow slowly and metastasize widely, both via the blood stream and through the lymphatics.

All physicians know the classic triad of pain, tumor, and hematuria, which ordinarily means advanced disease. Recognition while potentially curable depends upon suspicion generated by one of these symptoms, and verified by urography. If the affected kidney functions well, excretory urography suffices; if not, retrograde pyelography is needed. Inability to palpate a tumor is valueless, since a lesion of the upper pole of the kidney may become very large, particularly in a heavy set individual, without being detectable upon the most careful physical examination. Braasch summarizes the pyelographic findings as follows: (1) elongation of one or more calices; (2) encroachment on the renal pelvis; (3) dilatation or displacement of the renal pelvis; and (4) deformity and displacement of the ureteropelvic junction and upper ureter. (Figure 1) It is quite evident that an encapsulated, globular neoplasm may produce exactly the same deformity as a simple cyst. It is here that accessory studies are important.

Figure 1. Pyelogram of renal neoplasm.

* Presented at the Seventeenth Annual Meeting of the New Orleans Graduate Medical Assembly, March 11, 1954.

† From the Urological Division of the Department of Surgery in the Medical School of the University of Minnesota, Minneapolis.

In such a situation an accelerated sedimentation rate will suggest, but not clinch the diagnosis of neoplasm. If the results of palpation and pyelography strongly favor a cyst, and the patient is a poor surgical risk, aspiration from behind is invaluable. If clear fluid is encountered, it can be withdrawn and replaced with a contrast agent; a sharply marginated, circular mass of uniform density rules out a new growth. (Figure 2)

Figure 2. Injected simple cyst.

If a deformity is seen but no mass can be felt, aortography is valuable if it is important to avoid operation. Cysts appear as round or oval defects in the blood supply of the kidney (Figure 3); parenchymal neoplasms exhibit puddling of the contrast agent in their sinuses (Figure 4). The aortogram, however, will not differentiate an intracystic papillary cystadenocarcinoma or a necrotic parenchymal tumor without a demonstrable blood supply from a simple cyst, nor will it reveal neoplasms of the renal pelvis. While intracystic neoplasms are uncommon, their existence constitutes a real threat to accurate diagnosis, and requires surgical exploration in the occasional doubtful case

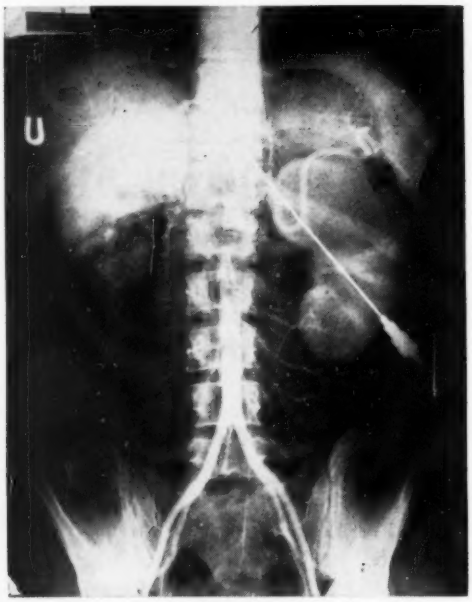

Figure 3. Aortogram of simple cyst.

in which an error would be a serious matter. (Figure 4)

Figure 4. Aortogram of renal neoplasm (parenchymal).

In spite of these pitfalls, the diagnosis of the average renal neoplasm is a simple matter if one considers the possibility and

makes the necessary studies. The atypical one may be quite another matter. Three factors promote confusion: the characteristically slow growth of the tumor, which permits local adjustments in adjacent organs without any symptoms until metastasis or local invasion has occurred; the fact that degenerative changes may lead to toxic effects before attention is attracted by the local process in the kidney; and the possibility that symptoms from the renal lesion may mimic other disorders of the kidney itself. That these are real problems is indicated by my study of 92 cases; in 38, or 41 percent, the first symptom pointed to a lesion outside the urinary tract. These symptoms were amazingly diverse and deceiving. They may be divided into a number of fairly clear cut groups.

Perhaps the commonest of the misleading presenting complaints was fever, either coupled with toxemia or preceded by it. This occurs in about ten percent of renal neoplasms in the absence of infection, and appears to result from degenerative changes which release "pyrogenic substances" into the circulation. There is often an associated anemia, and the sedimentation rate is accelerated. Such a combination always requires urography to differentiate it from such disorders as Hodgkin's disease, obscure infections, and malignancy in other organs.

A rarer source of confusion results from invasion or compression of adjacent viscera by a renal neoplasm or by a hematoma resulting from it. Such lesions may be mistaken for carcinoma of the stomach if the duodenum or jejunum is involved; a large tumor may invade even the lower small intestine and cause acute or chronic obstruction; the same may happen to the colon.

More frequently, bizarre metastases may be misleading. While solitary deposits in bone are rare, they are well recognized. They may take the form of pulsating masses in the skull or long bones, or of silent tumors which lead to pathologic fractures, as in the spine. Radiologically, these appear as rarefactions, rather as if an area had been "erased." (Figure 5) Periosteal reactions are uncommon. Any atypical destructive tumor of bone calls for urographic studies. Vertebral involvement is rare, but has to be borne in mind in severe backaches.

Figure 5. Metastasis to humerus with pathologic fracture.

While metastases to the lungs are usually readily recognized in the roentgenogram as multiple rounded, sharply marginated areas of increased density, (Figure 6) an occasional solitary lesion may be irregular in outline, and so be mistaken for a bronchogenic carcinoma, especially if the patient has pain in the chest with cough and hemoptysis. Such a case in our clinic had been diagnosed "respiratory papilloma" after a bronchoscopic biopsy, at which point the occurrence of hematuria led to investigation of the kidneys and recognition of a hypernephroma; the pathologist then changed his diagnosis. Barney and Churchill reported such a patient well for five years after removal of the renal and pulmonary tumors.

An exceedingly uncommon site of metastasis is the frontal sinus; a patient so afflicted when seen at the University Hospital had symptoms of frontal sinusitis; their cause was recognized only when solid material was found in the sinus at

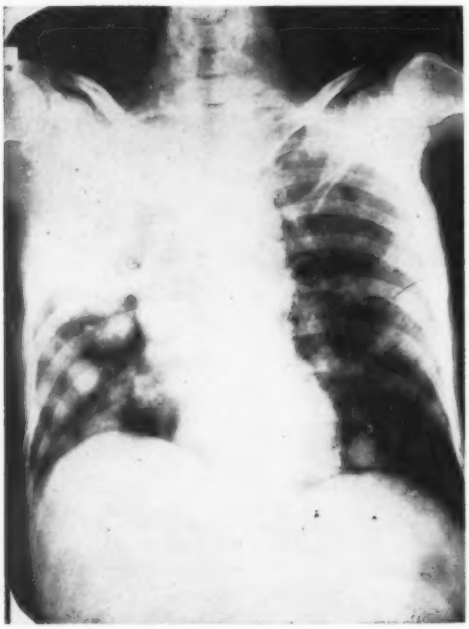

Figure 6. Metastases to lungs.

operation, and was identified as hypernephroma by microscopy.

Metastases to the digestive tract may be particularly difficult to recognize. In a remarkable instance seen at the University of Minnesota many years ago, a middle aged woman presented all of the features of cirrhosis of the liver. At laparotomy a "cirrhotic" liver was seen but not biopsied; improvement followed cholecystostomy, but autopsy a couple of years later revealed that the liver was filled with metastases from a neoplasm of the right kidney, and that cirrhosis was not present.

Secondary tumors of the tongue are usually solitary, deep seated nodules which are recognized only upon microscopic examination after removal. Metastatic lesions of the thyroid may be mistaken for adenomata or for primary carcinomata. They, too, are likely to be identified only with the microscope.

Metastases to the brain are rarely recognized as such when the primary tumor has been silent, until removed tissue is examined microscopically. The same may be said of metastases to the spinal cord, unless a vertebra is seen to be involved at roentgenography. In one case in our series the first inkling of disease consisted of paraplegia following a slight trauma which led to a pathological compression fracture.

Curiously enough, the ovaries and vaginal wall may receive metastatic deposits, apparently by retrograde flow through the ovarian vein, particularly on the left. The former consist of submucous nodules which are readily enucleated; the latter cause firm, elastic enlargements of the ovary. Recognition depends upon microscopic study. In addition, our series included one metastasis to the corpus spongiosum which was at first mistaken for a periurethral abscess; its true nature was determined at autopsy. Secondary deposits in the testicle have been reported.

The lymph nodes around the renal pedicle are, from the pathologist's viewpoint, the commonest sites of metastases from renal tumors. Not so well known is the possibility that the first recognizable sign of disease may be a mass in the neck from invasion of the cervical nodes; we have seen such a patient, as well as one in whom the local physician mistook a packet of involved inguinal glands for an inguinal hernia.

There are reports in the older literature of bronzing of the skin associated with anemia, at first thought to be of the primary or pernicious variety, but later found to be associated with a renal neoplasm which had not bled externally. The pigmentation of the skin has not been explained satisfactorily. Metastatic nodules in the skin have also been observed before the primary had manifested itself.

The possibility of confusing renal tumors and cysts has already been mentioned. It is well to remember that new growths of the kidney may produce occasional episodes of renal colic with minor hematuria, presumably from the passage of small clots or of bits of necrotic tumor. In one patient in our series, this had occurred annually for seven years.

Each episode had been treated by narcotics with relief until his physician died. The new one sent him for urological study, which revealed a large right hypernephroma. Curiously, he was still perfectly well seven years after nephrectomy.

The simultaneous presence of true renal stones together with a tumor is bound to give rise to considerable confusion, particularly if the pyelographic deformity is slight. One of our patients had passed several stones and had then remained in bed for a whole year; when the pyelogram showed only multiple filling defects thought to be overlying gas, he was naturally regarded as neurotic, and was sent home. He promptly passed another stone in the presence of his physician, and returned. At operation I was surprised and mortified to find a sizeable hypernephroma, but no stones—the filling defects had been due to overlying gas! In another instance, a calcified nodule of parenchymal neoplasm protruded into the renal pelvis; its true nature was discovered at operation for removal of the stone. It is only when so placed that the rather common calcifications within renal tumors are likely to be mistaken for stones in the pyelogram. The urological surgeon will very occasionally encounter a small hypernephroma as an incidental finding at a renal operation done for some other perfectly definite lesion.

In another curious case in our series, a man of thirty had several episodes of chills, fever and pyuria with mild renal pain. When his pyuria resisted good therapy, his physician sent him in for investigation. It was then discovered that a necrotic tumor was sloughing into the renal pelvis, and that infection was absent. There had been no gross bleeding. The patient survived nephrectomy for only a few months, after which he died from carcinomatosis.

The last possibility to be discussed is that of mistaking an adherent clot from renal bleeding for a vesical tumor. This will not happen if the inexperienced and occasional cystoscopist will subject all unusual lesions of the bladder to biopsy with cystoscopic forceps, if he cannot wash out the supposed tumor with an evacuating syringe.

To recapitulate, neoplasms of the renal parenchyma in the adult, while ordinarily easy to identify, occasionally give rise to bizarre symptoms due to compression, invasion, metastasis, or necrosis by or in a tumor which has not caused typical symptoms. In addition, they may mimic other lesions of the kidney. These cases will be recognized prior to death only if the physician bears these possibilities in mind, and makes, or causes to be made, careful pyelographic and, on occasion, other special examinations.

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EVALUATION OF THE SURGICAL TREATMENT OF AORTIC STENOSIS
(79 CASES)*

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INTRODUCTION

Stenosis is the most common lesion of the aortic valve, and generally results from organization of the endocardial exudate accompanying rheumatic activity. Less frequently it may be due to a congenital malformation where the valve is usually bicuspid, or to a degenerative calcific sclerosis.

A surgical method to correct the commissural fusion of rheumatic aortic stenosis was conceived and employed by Bailey and his associates in 1950 [1].

This technique utilized an approach through the left ventricular chamber. The commissures are then split by means of a specially designed instrument.

Recently an important modification enables the surgeon to reach the valve directly through the root of the aorta. This permits the separation of the commissures

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digitally or by means of a newly developed instrument.

This study analyzes the clinical experiences in a group of patients treated with either procedure. It is restricted to the 79 patients who had an aortic commissurotomy alone.

MATERIAL

The 79 patients consisted of 65 males and 14 females ranging in age from 14 to 67 years. They were divided into the groups as shown in Table 1.

TABLE 1
ANATOMIC PHYSIOLOGIC DIAGNOSIS AND MORTALITY RATES

GROUP	DIAGNOSIS	NO. OF CASES	DEATHS	% MORTALITY
I	AS	33	6	18.1
II	AS, ai	32	6	18.7
	AS, mi, ms	1	–	–
	AS, ai, mi, ms	3	–	–
III	AS, AI	7	5	71.4
	AS, AI, mi	1	–	–
	AS, MI	1	–	–
	AS, MI, ai	1	–	–
Totals		79	17	21.5

Legend: Capital letters refer to significant lesions.

Group I consisted of 33 patients in whom aortic stenosis was the *only* valvular lesion.

Group II included 36 patients in whom aortic stenosis was combined with other valvular lesions which were *physiologically insignificant*. In 32 of these patients aortic insufficiency was the only other involvement.

Group III consisted of 10 patients in whom aortic stenosis was associated with valvular lesions *other than mitral stenosis*, at least one of which was *physiologically significant*, and was not corrected at the time of surgery. In 7 of these patients aortic insufficiency was the only other involvement.

RESULTS

The preoperative clinical picture, including the symptomatic pattern, x-ray, and electrocardiographic examinations, brachial artery tracings, and the ballistocardiograms were analyzed to determine a basis for comparison with postoperative observations.

Aortic stenosis alone or in combination with valvular lesions other than significant mitral stenosis occurred predominantly in the male (Table 2). The vast majority of patients failed to recall the initial attack of rheumatic fever or any of its lesser manifestations (Table 2).

Fatigue was the earliest symptom and occurred in 98 per cent of the patients. Some degree of *dyspnea* was reported by every patient, although *pulmonary edema* had occurred in only 20 per cent of the group.

The *pain of coronary artery insufficiency* was the third most common symptom, and appeared in 58 per cent of the patients. *Edema* was noted in 39 per cent, *vertigo* in 36 per cent, and *syncope* in 27 per cent. *Hemoptysis* was reported by 20 per cent of the group.

Atrial fibrillation was not present unless the aortic stenosis was complicated by additional insignificant mitral lesions. *Emboli* were reported by 3 patients each of whom had atrial fibrillation.

From an auscultatory standpoint there was no exception to the finding of a loud, rough systolic murmur at the base of the heart. The aortic second sound was diminished in all but five patients. A thrill was present in 87 per cent of the patients.

The heart size was increased two plus or greater in 72 per cent and the aortic valve was calcified in 50 per cent of the group.

All but 4 patients had abnormal electrocardiograms. In 68 per cent of the patients the tracing was indicative of left

TABLE 2

	Group I		Group II		Group III		Totals	
Total No. Pts.	33		36		10		79	
Male	31	94%	26	70%	8	80%	65	82%
Female	2	6%	10	30%	2	20%	14	18%
History of Rheumatic Fever	9	27%	4	12%	5	50%	18	22%
Fatigue	32	97%	35	97%	10	100%	77	98%
Dyspnea—less 1 yr.	9	27%	2	6%	1	10%	12	15%
2-5 yrs.	21	54%	21	63%	7	70%	49	63%
more 5 yrs.	3	9%	13	28%	2	20%	18	22%
Pulmonary Edema	9	27%	6	18%	2	20%	17	20%
Angina	20	60%	19	53%	7	70%	46	58%
Syncope	12	42%	9	25%	1	10%	22	27%
Vertigo	16	48%	11	33%	2	20%	29	36%
Edema	10	30%	17	47%	4	40%	31	39%
Ascites	0	–	0	–	0	–	0	–
Hemoptysis	5	15%	9	25%	2	20%	16	20%
Emboli	0	–	3	9%	0	–	3	4%
Blood Pressure—Normal	24	73%	31	85%	9	90%	64	81%
High (above 150 systolic)	3	9%	3	9%	1	10%	7	9%
Low (below 100 systolic)	6	18%	2	5%	0	–	8	10%
Rhythm on admission								
Normal Sinus	33	100%	32	88%	9	90%	74	94%
Atrial fibrillation	0	–	4	12%	1	10%	5	6%
A_2								
Normal	2	6%	3	9%	0	–	5	6%
Decreased	31	94%	33	91%	10	100%	74	94%
Thrill	31	94%	33	91%	5	50%	69	87%
Heart Size—N	1	3%	3	9%	1	10%	5	6%
1 plus	8	25%	9	25%	1	10%	18	22%
2 plus	14	42%	18	54%	4	40%	36	44%
3 plus	5	15%	3	9%	4	40%	12	15%
4 plus	5	15%	3	9%	0	–	8	13%

TABLE 3
CAUSE OF DEATH

Cause of Death	Group I	Group II	Group III	Totals	Time Relation
Ventricular fibrillation	4	2	3	9	Immediate
Hemorrhage	1	3	1	5	Immediate
Embolism, cerebral	1	–	–	1	55 days
Renal failure	–	1	–	1	7 days
Free AI	–	–	1	1	1 day

ventricular hypertrophy and strain.

In all of the patients subjected to brachial artery tracings, an anacrotic notch or a slurring of the ascending limb of the curve with a delay in its peak was observed.[2]

The ballistocardiogram was abnormal in 46 (85 per cent) of the 54 patients examined. The most consistent abnormality was a shallow K wave which was observed in 40 patients under basal conditions.

OPERATIVE MORTALITY

The operative mortality in Group I was 18.1 per cent and in Group II, 18.7 per cent. In Group III, 50 per cent of the patients died. The mortality for all patients was 21.5 per cent (Table 1). The immediate causes of death are listed in

TABLE 4
POSTOPERATIVE COMPLICATIONS IN HOSPITAL

TYPE	GROUP I	GROUP II	GROUP III	TOTAL
1. Cardiac				
Atrial fibrillation (converted)	1	1	1	3
Atrial fibrillation (not converted)	2	1	–	3
Congestive failure	3	1	–	4
Pericarditis	–	2	–	2
2. Pulmonary				
Left effusion	12	7	1	20
Retained secretions	2	–	–	2
Hemopneumothorax	–	1	–	1
Atelectasis	1	–	–	1
3. Miscellaneous				
Anemia	3	2	–	5
Renal failure	1	2	–	3
Epistaxis	–	1	–	1
Fever (unexplained)	7	2	–	9

TABLE 5
GROUP CLASSIFICATION IN FOLLOW-UP REVIEW

	GROUP I	GROUP II	GROUP III	TOTALS
No. of Patients	19	21	4	44
Deaths since operation	1	1	–	2

TABLE 6
DURATION OF FOLLOW-UP REVIEW IN MONTHS

MONTHS SINCE SURGERY	GROUP I	GROUP II	GROUP III	TOTAL
3-6	3	2	–	5
6-12	7	14	4	25
12-18	6	3	–	9
18-24	2	1	–	3
Total	18	20	4	42

Table 3. The time relation of operation to death is listed in Table 3.

POSTOPERATIVE HOSPITAL COURSE

Cardiac complications without mortality occurred in 12 (19.3 per cent) of the patients (Table 4). *Atrial fibrillation* developed in 6 patients during the first postoperative week. The rhythm was reverted to a normal sinus mechanism in half of these patients, one of whom had additional but insignificant aortic regurgitation. Recovery was complete in all of these patients.

Pulmonary complications, without death, were encountered in 24 (38.7 per cent) of the patients surviving surgery.

Febrile reactions which persisted longer than the fifth postoperative day were considered a complication. These were encountered in 10 patients. The etiology in 1 patient was later established as staphylococcic subacute bacterial endocarditis from which the patient succumbed in three months. This was the only instance of subacute bacterial endocarditis in the entire series. The temperature elevation of the remaining 9 subsided by the twelfth postoperative day.

FOLLOW-UP REVIEW

The follow-up evaluation was limited to those patients who had been operated upon at least three months previously. Two deaths in this group occurred, one in three months due to subacute bacterial endocarditis, and the other in seven months as the result of congestive heart failure which had been present prior to operation and recurred following discharge

from the hospital. Of the remaining 60 patients, 44 had had surgery at least three months previously. Tables 5 and 6 indicate the group classifications and the time in months between surgery and the follow-up review.

Of 42 patients (Table 2) who had experienced fatigue as a major preoperative symptom, 36 (85.7 per cent) were significantly improved.

Thirty-seven patients had dyspnea, 33 (89.1 per cent) of whom were improved after surgery. Seven of these patients no longer experienced the complaint.

All of the patients with vertigo were improved and in 3 the symptoms disappeared entirely. Of the 13 patients who had syncope, not one had experienced a similar attack postoperatively. Thirteen patients had had peripheral edema, and of these, 9 no longer noticed this finding and 1 observed considerable improvement.

A rough aortic systolic murmur had been heard in all patients preoperatively. In 9 the rough murmur became blowing in character and reduced in intensity. In 19 of the remaining 33 patients (57.3 per cent), the murmur remained rough but less intense.

Thirty-seven patients had a decreased aortic second sound prior to surgery. Following operation, the aortic second sound was increased in intensity in 28 (75.6 per cent).

In 6 patients an early blowing diastolic murmur was heard after surgery where no murmur was present preoperatively. In 2 additional patients the intensity of the previously existing murmur was increased. A significant aortic regurgitation in 3 of these 8 patients was indicated by an appreciable increase in pulse pressure.

Although the transverse measurement of the heart in 4 patients decreased 1 cm. or more, significant changes in size were the exception.

Of the 38 patients with abnormal electrocardiogram, 6 (15.7 per cent) were returned to normal limits. All of these previously had patterns indicative of left ventricular hypertrophy and strain. In no case were the changes secondary to the withdrawal of digitalis.

An increase in the depth of the K wave in the ballistocardiogram was observed in 32 of the 40 patients (80 per cent) with shallow waves preoperatively.

In the late convalescent period from the time of hospital discharge and through the duration of this follow-up study, 4 patients had embolic accidents. Three involved the retinal artery and 1 the cerebral circulation. Eight patients (19 per cent) had episodic febrile reactions requiring further periods of bed rest, antibiotics or both.

DISCUSSION

Compared to the definite symptomatic pattern of aortic stenosis and its chronicity under adequate and previous medical management, the postoperative improvement in fatigability, dyspnea, and angina was impressive and particularly so since they were observed under a more rigorous routine of work than had been possible formerly. (Table 7)

The postoperative changes were not restricted to the subjective pattern. The change in the quality or intensity of the

TABLE 7
FOLLOW-UP REVIEW
SYMPTOMATIC COMPARISON

Symptom	Number of Patients Symptoms Preop.	Postop. Result	
Fatigue	42	MI	22
		I	14
		S	3
		W	3
Dyspnea	37	NP	7
		MI	20
		I	6
		S	3
		W	1
Angina	19	NP	6
		MI	9
		I	3
		S	1
Edema	13	NP	9
		MI	1
		S	3

Legend:
MI markedly improved
I improved
S same
W worse
NP not present

systolic murmur in approximately half of the patients following aortic commissurotomy can be accepted as a major accomplishment.

It is probable that altered valve function resulting from surgery is better reflected in heart sounds. Such a correlation has crystalized after mitral commissurotomy. If that contention is substantiated with time, the altered aortic second sound in three-fourths of the patients following aortic commissurotomy is an important objective gain.

The creation or exaggeration of the murmur of regurgitation is a serious development. The exchange of a significant stenosis for a significant regurgitation at the cost of a serious operation is an important and regrettable result, the infrequency of which is small solace.

Significant alterations in the brachial artery tracings have been noted by Goldberg and his associates.[2] These mainly consist of the disappearance of the anacrotic notch or a change in its abnormal position following the Valsalva maneuver.

The development of embolic accidents in the late recovery period probably resulted from the formation of left intraventricular or mural thrombus following the necessary instrumentation. Embolic issue resulting from fracture of a calcific valve was encountered as an immediate and not delayed hazard at surgery.

The mortality in aortic commissurotomy for pure stenosis is three times as great as that in mitral commissurotomy. The presence of additional valvular disease which is insignificant does not increase the risk of surgery. When aortic regurgitation is significant, the mortality is increased tenfold over that of mitral commissurotomy.

The presence of a significant regurgitation is the most important single factor contraindicating surgery for aortic stenosis. Until that time when regurgitation can be corrected simultaneously, surgery should not be performed in these patients.

On the basis of the experience in this series the indications for aortic commissurotomy may be clarified. The primary indication is the presence of aortic stenosis which results in significant pathophysiology. Any combination of the subjective or objective manifestations of the pathophysiology which is progressive is an acceptable indication provided none of the contraindications are present.

Significant aortic regurgitation and congestive heart failure are absolute contraindications. Additional insignificant valvular lesions are not deterrents. Heart failure that responds to therapy is not a contraindication if gallop rhythm is not present.

The slowly progressive nature of aortic stenosis, the operative mortality, and the postoperative complications are the obvious reasons for a sober approach to aortic commissurotomy. Where indicated, and when properly applied, this technique, however, has afforded relief and functional capacity to the vast majority of patients who could not obtain equal benefit under carefully regulated medical routines.

SUMMARY

1. An evaluation of the surgical management of aortic stenosis is described in which the mortality and complications are analyzed and the preoperative clinical and objective findings in 79 patients are compared with those three to twenty months after operation.

2. A striking improvement is observed in the key symptoms of fatigability, dyspnea, and angina when compared with the chronic state of disability which existed under persistent medical care.

3. Clinical changes are accompanied by alterations in the brachial artery tracing, and auscultatory findings which suggest improvement in valvular function.

4. The indications and contraindications for aortic commissurotomy are outlined.

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VARYING CLINICAL PATTERNS OF PULMONARY INFARCTION *

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The problem of thrombo-embolism, its dangerous and dreaded sequelae, has fast assumed a major role in the routine practice of medicine. With the advent of effective medical therapy for the infectious diseases and the relative increase in degenerative and neoplastic conditions, it has become essential for the physician to instigate earlier diagnosis, more effective therapy and a striking decrease in complicating features of these diseases. Pulmonary embolism and infarction represents one of the more serious and potentially fatal complications of medical and surgical practice. Therefore, a fuller knowledge of pulmonary infarction with its varied clinical patterns is necessary as the problem is not as simple as most of us have been led to believe. As we become more aware of the possibilities of this serious occurrence, we shall become more vigilant in the early diagnosis and effective treatment of thrombo-embolic disease to avoid a possibly fatal outcome.

The actual increase in incidence of thrombo-embolic disease is well established, but unfortunately, the clinical and roentgenologic recognition has lagged far behind. In 1940, Hampton and Castleman [1] made a critical study of 3,500 postmortem examinations. They found that in 9 per cent of cases pulmonary embolism existed and was the cause of death in 3.5 per cent. In 1941, Krause and Chester [2] reported on 6,548 autopsy studies and found hemorrhagic infarctions in 5.2 per cent. Ten years later Ochsner, DeBakey and DeCamp [3] reported on the actual increase in the incidence of thrombo-embolism and its more serious complication of pulmonary infarction. In the past decade the average life span has decidely increased; more people are reaching the stage of life where peripheral vascular and cardiac disease makes its appearance, with consequent slowing of the blood stream and acceleration of the clotting time. These factors and an increasing awareness of the problem contribute to this relative increase in incidence of thrombo-embolic disease. Stead [4] has made the statement that the diagnosis of pulmonary emboli and infarction will be made in direct proportion to the index of suspicion of the attending physician. To increase the index of suspicion to the possibilities of a potentially fatal disease, therefore, is one of the prime purposes in writing this paper.

ANALYSIS OF MATERIAL

To study the varying clinical patterns of pulmonary infarction, hundreds of cases have been studied. From this group 79 cases have been selected in which the diagnosis of pulmonary embolism and infarction has been established either by clinical or postmortem examination. The other cases have been discarded because they failed to meet minimal diagnostic criteria. Sixty-three of the cases were taken from the L.S.U. Unit of Charity Hospital in New Orleans, excluding the pediatric division and prematurity. The other 16 cases were diagnosed in the Southern Baptist Hospital, New Orleans. All cases were seen during the period from July 1st, 1952, through April 30th, 1954.

TABLE 1
ANALYSIS OF CASES

CLINICAL STATUS	NO. OF CASES
Heart disease	41
Postoperative	21
Post-traumatic	6
Miscellaneous	11
Total	79

Table 1 demonstrates the clinical status of the patients at the time a diagnosis of pulmonary embolism and infarction was made. A little over half the cases (52 per cent) represented patients who were suffering from heart disease. A little less than one-third of the patients (26.5 per cent) had recently undergone some operative procedure. Of the 6 post-traumatic patients, all had sustained some type of

* Presented at the Seventy-fourth Annual Meeting of the Louisiana State Medical Society, May 21, 1954, in New Orleans.

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major fracture which required splinting and prolonged traction. The remaining cases formed a miscellaneous group with a variety of underlying diseases.

The relationship of pulmonary infarction to underlying or previous circulatory disturbance of the lung has been a subject of considerable controversy. Karsner [5, 6] has stated that there must be heart failure before infarction of the lung can occur. There has been considerable experimental work since both for and against this theory [7, 8]. Also, other workers have postulated that previous atelectasis and stasis may be more important predisposing factors in the development of pulmonary infarction. The dual blood supply of the lung has come in for considerable emphasis in recent experimental work. The role of the [9] bronchial arteries in pulmonary embolism and infarction has been studied very completely by Ellis, Grindlay and Edwards [10]. They conclude that the bronchial arterial circulation may actually be a contributing factor in the development of pulmonary infarction after pulmonary embolism. In a group of experiments they demonstrated that infarction occurred in lobes containing emboli when pulmonary venous congestion was present, regardless of the presence or absence of intact bronchial arterial circulation. In our series of cases it was apparent to us that underlying cardiac and circulatory disease played an important role in the development of clinical infarction. As noted earlier, 52 per cent of the patients were suffering from some form of heart disease.

TABLE 2
ETIOLOGIC TYPES OF HEART DISEASE

TYPE	NO. OF CASES	PERCENTAGE
Arteriosclerotic	18	44.0
Hypertensive	13	32.0
Luetic	5	12.0
Rheumatic	4	10.0
Congenital	1	2.0
Total	41	100.0

Table 2 gives an analysis of the etiologic types of heart disease encountered. Contrary to other reports [11] rheumatic heart disease accounted for only 10 per cent of the cases. Coronary artery disease and hypertension were the more responsible factors. Of considerable interest to us was the fact that out of the 41 patients with heart disease who developed infarction of the lung, 33 had objective clinical signs of heart failure with pulmonary congestion.

TABLE 3
ANATOMIC LOCATION OF PULMONARY INFARCTION

Right lower lobe	19
Left lower lobe	19
Multiple lobes	10
Right middle lobe	6
Right upper lobe	4
Left upper lobe	3

Table 3 classifies the anatomic location of the pulmonary infarctions in this group of cases. In this particular series there was equal distribution of the infarcted areas in the right and left lower lobes. As has been well demonstrated in past studies, infarcts of the lung are frequently multiple and are most often found in the right lung and in the lower lobe. The predilection for the right lung was not demonstrated in our series, and there tended to be equal distribution in the lower lobes. Ten of the cases showed multiple areas of infarction. Boyd [12] believes that the larger size of the right pulmonary artery and the greater congestion of the lower lobes are the factors which serve to explain the typical distribution of the pulmonary infarcts.

DIAGNOSIS

Table 4 illustrates the typical clinical pattern as seen in most cases of pulmonary infarction. However, it should be stressed that the diagnosis of this condition is not a simple, easy one. All too

TABLE 4
TYPICAL CLINICAL PATTERN IN PULMONARY INFARCTION

1. Shock or uneasiness
2. Dyspnea
3. Elevated pulse rate
4. Sudden chest pain
5. Hemoptysis
6. Pulmonary rales
7. Pleural friction rub
8. Slight to moderate fever
9. Leucocytosis
10. Elevated sedimentation rate

often the clinical picture is not of the so-called "text-book" variety. As Roth [13] has so aptly stated, "the diagnostic problems are many and are due mainly to the fact that acute pulmonary embolization often simulates other acute clinical syndromes." The collective appraisal of all clinical evidence is necessary if one would make a diagnosis of pulmonary infarction following embolization. The clinician must always be aware of the possibility of its occurrence or often the diagnosis will be overlooked. As pointed out earlier in this paper, pulmonary infarction tends to affect certain groups of patients: i.e., most particularly patients suffering from heart disease and in congestive failure; patients who have recently undergone surgical procedures; the chronically ill and invalid; and all patients who are subject to prolonged bed rest and inactivity.

TABLE 5
VARYING CLINICAL PATTERNS OF PULMONARY INFARCTION

	No. Cases	Per Cent
Dyspnea	71	90.0
Tachycardia	60	76.0
Chest pain	49	60.5
Fever	47	59.5
Cough	42	54.0
Shock	40	51.0
Leucocytosis	32	40.5
Hemoptysis	26	33.0
Thrombophlebitis	21	26.5
Friction rub	12	15.0
Phlebothrombosis	9	11.0

In Table 5 we have listed the more important and significant clinical symptoms and signs uncovered in critical analysis of the 79 cases studied. Dyspnea and tachycardia were present in the majority of cases, but the exact significance of these two clinical features is subject to doubt because of influence of underlying cardiac disease and congestive heart failure. However, even in the postoperative and posttraumatic groups an increase in the respiratory and pulse rates was a significant and early feature of pulmonary embolism.

Chest pain was present in a significant percentage of patients (60.5 per cent). Characteristically, it tended to be sharp and stabbing and showed definite relationship to the respiratory cycle. The pain was usually sudden in onset and in our series radiation was inconstant.

Fever and cough occurred in over half the patients. However, in our experience hemoptysis was present in only one-third of the patients and we do not regard it as a vital point in the diagnosis of pulmonary embolism with infarction. Chapman [14] has pointed out that when hemoptysis does occur within a day or two of the onset of chest pain that the material usually tends to be bright red, but as time passes it becomes dark brown in character.

From the study of these cases, shock was present in about half of the total number. It usually is the result of sudden massive obstruction of a major pulmonary artery and was universally present in the cases of sudden death. Often the initial shock resulted in a definite type of vasomotor syndrome with marked imbalance of the sympathetic nervous system, particularly manifesting itself in a general vagus reaction. Because of this type of vagal reaction, reports of acute abdominal pain simulating some type of acute abdominal crisis have been made [13]. In this particular series of cases, we did not encounter such a presenting syndrome, but it is easy to visualize the differential problems it would cause.

A significant degree of leucocytosis was present in less than half of our cases, and along with fever it is our impression that significant elevations are not usually seen unless complicating features are encountered.

A definite friction rub and leg signs were the least reliable clinical features in our study. This does not in any way minimize the extreme importance of searching for these signs, because when found they add significantly to the suspicion and diagnosis of pulmonary embolism with infarction. Since the incidence of thromboembolic disease is still relatively high in postoperative patients and usually occurs in areas that are easily accessible to direct examination, a careful search should be made at least daily.

RADIOLOGIC DIAGNOSIS

In the presence of the typical clinical features of pulmonary infarction, radiologic proof tends to assume a secondary and confirmatory role. Stress should be placed here on the very vital point that where the clinical pattern is indicative of pulmonary embolism, with or without infarction, treatment should never be deferred until radiologic proof has been established. Early recognition of the condition and prompt treatment may well be life-saving. Radiologic proof may often be delayed in its appearance; it may be obscured by secondary features such as massive pleural effusion, concomitant pneumonia, underlying heart disease and acute congestive failure; and thirdly, it may be hindered by the difficulty of obtaining good, diagnostic films early in the disease when the patient so often is seriously or critically ill, and cannot be moved. Short [11] after a study of 120 patients with embolism and infarction found that a triangular shadow with its apex toward the heart was not to be expected and was present in only 5 per cent of the cases they examined. Also, in 9 cases with definite thrombo-embolic disease of the lung normal radiographs were found. They consider the following factors as important in the negative radiograph: (1) Infarct shadow hidden behind diaphragm or heart, (2) pulmonary congestion, (3) hydrothorax, (4) embolism without infarction, (5) examination made too soon or too late, (6) inadequate technique. A very complete summary of the usual roentgenologic findings in both "complete" and "incomplete" pulmonary infarction has been outlined by Hampton and Castleman [1], and lately by Smith [15], who emphasizes their radiographic variability, and believes that the odd shape of a homogenous density is helpful in diagnosis and that multiple x-ray films are important. The fact that pulmonary embolism may occur without infarction has been stressed recently in the literature. Shapiro and Rigler [16] make the statement that "pulmonary embolism does not always result in the formation of a hemorrhagic infarct in an individual with a normal circulation." They stress in the radiologic examination the presence of a segmental area of increased radiability, a loss of the normal vascular pattern in the infarcted area, and often an increased density and sharper demarcation of the involved vessel. Figures 1, 2, 3, and 4 demonstrate the varying radiologic patterns of pulmonary infarction.

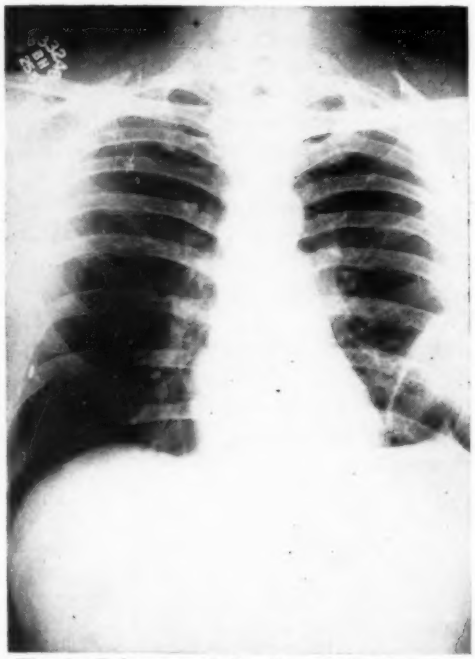

Fig. 1. Pulmonary infarction of the left lower lobe, showing the rather typical wedge-shaped density and tinting of the left diaphragm due to adhesion.

DIFFERENTIAL DIAGNOSIS

In Table 6 are listed some of the conditions most often confused with the diagnosis of pulmonary infarction. The impor-

TABLE 6
CLINICAL CONDITIONS MOST COMMONLY CONFUSED WITH PULMONARY INFARCTION

1. Lobar pneumonia
2. Acute myocardial infarction
3. Congestive heart failure
4. Massive or minimal collapse of lung
5. Linear atelectasis
6. Primary pleural effusion
7. Mediastinal emphysema
8. Lung abscess
9. Acute abdominal episodes
10. Subphrenic abscess

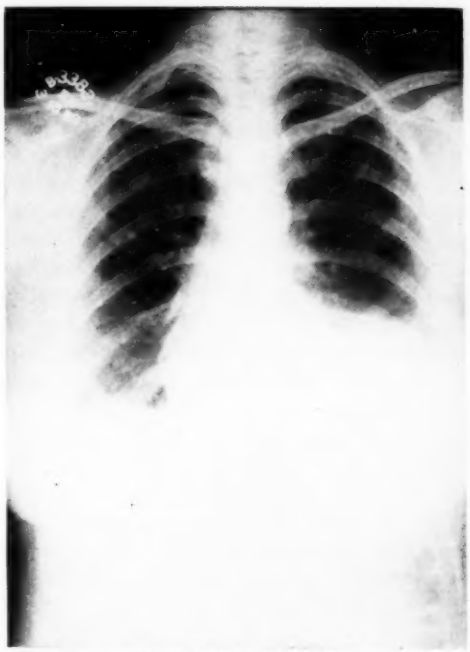

Fig. 2. A patient with infarction of the left lower lobe showing consolidation and pleural reaction.

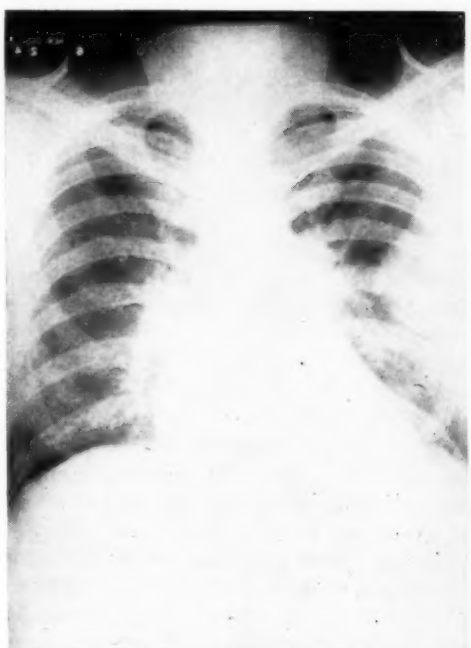

Fig. 3. Rounded density in periphery of left mid-lung field which proved to be pulmonary infarct. Initially lesion was considered to be possible carcinoma of lung.

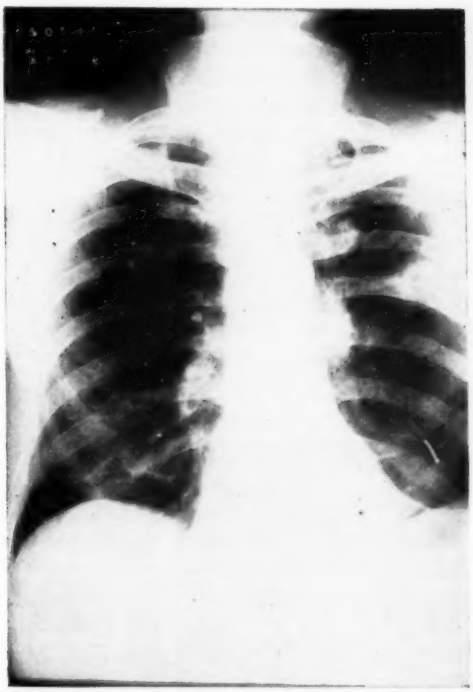

Fig. 4. Cavity formation within a bland pulmonary infarction involving the left upper lobe.

tance of a careful history where available and a critical analysis of the clinical and roentgenologic findings cannot be overemphasized.

One of the most important problems in the differential diagnosis of pulmonary infarction is that of acute myocardial infarction. Often the two conditions co-exist which makes the problem even more difficult. Pulmonary emboli arising from mural thrombi situated in the right side of the heart are very commonly encountered [17]. Probably the most important reason for confusing the two is the very close similarity of the electrocardiographic findings in pulmonary infarction with right heart failure (acute cor pulmonale) and posterior myocardial infarction. Roth [13] emphasized the difference in the onset of the two conditions; type of chest pain; later onset of shock (if present); fever, leucocytosis, and elevated sedimentation rate in myocardial infarction; and careful attention to radiologic and electrocardiographic details. In only 3 of our patients

did we find the typical electrocardiographic changes seen in acute pulmonary infarction. Murnaghan, McGinn and White [18] listed these changes as: (1) Prominent S wave and low origin of the T wave in lead I, the S-T segments starting slightly below the base line; (2) a gradual "staircase" ascent of the S-T interval, from the S wave to the T wave in lead II; (3) conspicuous Q waves and a late inversion of the T waves in lead III; and (4) in some cases, abnormal direction of the T waves in lead IV without alteration of the QRS complexes. In Fig. 5

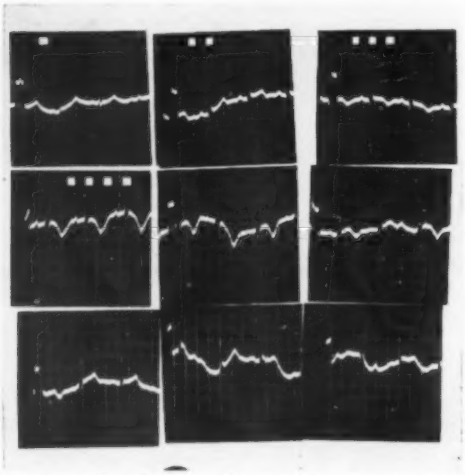

Fig. 5. The electrocardiogram in a patient with massive pulmonary infarction showing right axis deviation, S-T segment shift in lead II, Q wave and late inversion of the T wave in lead III.

is seen the electrocardiogram on one of our patients which was compatible with acute pulmonary infarction. These typical changes in the electrocardiogram are believed due to dilatation and partial failure of the chambers of the right side of the heart.

Durant [19] et al found other significant electrocardiographic changes in acute pulmonary embolization characterized by defective intraventricular conduction. They stated that graphic changes occur as follows: (1) early changes, characterized by intraventricular conduction defect of the atypical right bundle branch type, and (2) late changes, characterized by the pattern described by Murnaghan, McGinn and White [18] and others as representing acute cor pulmonale.

TREATMENT

The single, most important factor in the treatment of pulmonary infarction is early recognition of the condition. Since thrombo-embolic disease tends to affect certain groups more than others as previously pointed out, particular care should be given to the cardiac, postoperative, and chronically ill patient. Early recognition of a focus of thrombo-embolic disease and prompt institution of medical and/or surgical therapy can often prevent a possible fatal complication such as pulmonary infarction from occurring. Active treatment of this disease is both medical and surgical and demands close cooperation on the part of the internist, surgeon, and radiologist. The value and general acceptance of anticoagulant therapy in thrombo-embolic disease, and particularly, pulmonary infarction is now well recognized. There are numerous, well documented reports in the literature [20, 21]. In the present series of cases, only 19 patients received anticoagulants. Of this group there were 14 survivals and 5 deaths. Of the remaining cases that did not receive anticoagulants, there was a corresponding, higher mortality rate. It is not within the purpose or scope of this paper to give large statistical studies in support of anticoagulant therapy, or to go into a detailed account of individual anticoagulant drugs or the efficacy of each particular one. If anticoagulant therapy is used, remember that the drugs so used can and often do cause serious hemorrhagic complications if used indiscriminately or without full knowledge of their potential effects on the clotting mechanism. Adequate laboratory facilities are mandatory in the successful management of any program of anticoagulant therapy.

Venous ligation is also a very effective therapeutic measure to prevent further emboli from reaching the lungs from leg and pelvic veins. Stead [4] has pointed out the following points where venous ligation is used: (1) The source of the embolus is unknown and, therefore, both femoral

veins or the vena cava must be ligated. (2) An occasional immediate mortality is unavoidable if caval ligation is done; the ligation of both femoral veins under local anesthesia is a safer procedure in most severely ill patients. (3) In certain patients ligation is best followed by the use of anticoagulant therapy. (4) The amount of edema of the legs after ligation appears to depend on the extent of thrombophlebitis.

Finally, the supportive care of the patient is of extreme importance. Good nursing care, proper diet, and the prevention of further complications is essential. In our own experience we have found the role of antibiotics a very important one in the prevention of an overwhelming concomitant pneumonia, secondary lung abscess, empyema, and septicemia.

SUMMARY AND CONCLUSIONS

1. Following an analysis of 79 cases of pulmonary embolism and infarction, it was found that the typical pattern of clinical features is rarely encountered. Also, it is our opinion that the problem of pulmonary infarction has been oversimplified.

2. The more important and statistically significant clinical features were in our series of cases dyspnea, tachycardia, pleuritic chest pain of sudden onset, fever and cough. Shock was universally seen in cases where a major pulmonary artery was massively occluded, but in the total series of cases was found to be present in only half the cases (51 per cent).

3. Hemoptysis, pleural friction rub, and leg signs were found to be generally unreliable signs and were frequently absent. However, when these signs were present they served as strong confirmatory evidence of pulmonary infarction.

4. The radiologic diagnosis of pulmonary infarction was found to be an extremely difficult one to establish. The typical triangular shaped shadow is rarely encountered in contradistinction to older, more pragmatic descriptions of this condition.

5. The differential diagnosis of pulmonary infarction is a complex and difficult one due to the many clinical syndromes that may be simulated. The most important condition that must be differentiated from acute pulmonary infarction is that of posterior myocardial infarction.

6. An early recognition of the disease is essential. Prompt and adequate treatment will often prevent an otherwise fatal outcome. Stress is placed on a combined therapeutic program with full cooperation of the internist, surgeon, and radiologist. Patients should be treated on a highly selective basis with anticoagulants, venous ligation, and antibiotics.

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PRIMARY TREATMENT OF SOFT TISSUE INJURIES OF THE HAND *

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The main responsibility for the diagnosis and treatment of hand injuries rests upon the doctor who gives the primary care of this injury. The primary treatment is extremely important in that it determines, to a great extent, whether complications will result and to what degree of usefulness the hand can be restored. Thus, the doctor giving the primary treatment has the greatest responsibility and yet, in a large number of instances, rather minor significance is attached to the treatment of hand injuries. The purpose of this paper is to present some fundamentals in the primary treatment of hand injuries, in the hopes that better primary care can be given.

FIRST AID TREATMENT

As in any open, (compound), injury, the wound should be protected from further contamination or damage. Clean or sterile dressings should be used to cover the wound, bleeding should be controlled by pressure, whenever possible, and tourniquets should not be applied for emergency transportation, unless bleeding cannot be controlled by pressure dressings. If possible, the hand should be splinted in some manner for the emergency transportation of the patient.

When the patient is seen by the doctor, a history of the details of how the accident occurred should be obtained. The time, place, causative agent and mechanism of the injury, should all be determined since they are important in determining what the care will be. X-rays of the hand should be taken, preferably with the dressings in place, before the hand is examined. After the x-rays have been taken, the patient should be taken to an operating room or an emergency room with complete operating facilities available. The examination of the wound should be done under completely sterile conditions and the examiner should wear a mask to prevent further contamination of the wound.

WOUND EXAMINATION

After the history has been obtained and the x-rays reviewed and the patient has been taken to the operating room, the hand may be examined. The patient is not anesthetized. The wound is inspected. Sensation of all of the parts is tested and active motion of all of the parts is tested, against resistance, if possible. Tests are made to determine whether or not the function of the profundi and sublimi of the fingers is present, as well as function of the intrinsic muscles of the fingers and thumb and the wrist and finger extensors. The findings of this examination should be recorded at this time so that accurate records will be present, in case of later questions concerning the injury.

After this examination has been completed, the patient may then be anesthetized by the method chosen. This may be done by nerve block or by general anesthesia and in most cases we prefer general anesthesia. No surgery of the hand should be attempted without the bloodless field produced by proper application of a tourniquet and all cases, no matter how trivial, are cared for with the aid of a tourniquet. The tourniquet is applied before the cleaning of the hand is done, in order to prevent further bleeding.

The wound is covered with sterile dressings and the surrounding skin is shaved and cleansed with a soap or detergent and a suitable antiseptic. The antiseptic is not introduced into the wound and after completion of preparation of the skin the extremity is draped so that the hand is freely movable for the complete care. The surgeon then changes gown and

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gloves and proceeds with the surgical care of the wound.

If the wound has to be enlarged, in order to make the proper examination and treatment of the tissues, the principles laid down by Bunnell in his excellent text book should be adhered to. Incision should parallel flexion creases and if a flexion crease has to be crossed, a zigzag, or curving incision should be made so that scarring in the flexion crease with subsequent contraction will not occur.

In the hand, as in the face, all tissues should be spared as much as possible. Any tissue that is devitalized should be excised. A minimal amount of skin edge is excised and only traumatized noncontracting muscle is excised. Tendons and nerves should be preserved, if possible, unless it has been determined that the involved part or parts of fingers are to be amputated. Bone fragments should be preserved, unless they have been completely detached from surrounding tissue, in which case they should be removed.

After the removal of all devitalized tissue, the repair of the hand then can be undertaken. The first thing to be done is to repair the bony parts that have been damaged. If dislocations are present, they should be reduced. If they are stable, no further treatment of the dislocations is required, except for the immobilization to be used after the completion of the repair of the hand. If the dislocations are unstable and will not remain reduced, a small Kirschner wire may be drilled across the site which will prevent recurrence of the dislocation. This wire is usually cut off beneath the level of the skin and allowed to remain during the healing period. It may be removed at a later date, under local anesthesia. If fractures are present and are unstable, they also should be reduced under direct vision and in most cases small Kirschner wires, placed obliquely across the fracture line, will maintain a reduction until the postoperative splint has been applied. Not all fractures of the hand have to be pinned, but all unstable fractures should be pinned in order to preserve anatomical alignment. A small Kirschner wire hand drill, devised by Dr. Bunnell and his associates, is suitable for the introduction of the small Kirschner wires. In some instances, the electrical motors have attachments which can be used for the insertion of these wires.

TENDON INJURIES

In the fingers, laceration of the tendons is usually best treated primarily by the initial wound treatment and allowing the actual tendon laceration to go unrepaired until a later date. Occasionally, primary repair of the lacerated tendons in the finger is indicated but the indications for primary repair are very few and limited. If the injury should be at the insertion of a profundus tendon and the remainder of the tendon is not damaged in any way, this profundus could be reinserted into the distal phalanx. If the injury is proximal to the distal interphalangeal joint and distal to the distal flexion crease of the palm, no primary repair of the tendon should be done. This is the area described as "no man's land" by Dr. Bunnell and it is the area that leads to the greatest degree of adherence in any circumstances. No primary treatment of laceration in this area should be done at any time.

Lacerations of the profundus and sublimus tendons in the palm of the hand, from the level of the volar carpal ligament to the distal flexion crease of the palm, may be required primarily. In this instance, the sublimus tendons are not repaired but are allowed to retract out of the wound and only the profundus tendons are repaired. This will prevent adherence of the profundus and sublimus tendons together and will give a far better range of motion than it is possible to obtain when both flexor tendons are repaired. A finger with good profundus function has essentially a normal range of motion, in contrast to a finger having only sublimus function which has a definitely limited range of motion.

Lacerations of the flexor tendons proximal to the volar carpal ligament may be repaired individually and the profundus and sublimus tendons can be repaired with

less chance of adherence and resulting limitation of motion. Knowledge of the anatomy and interrelationships of the tendons is necessary in order to be able to attach the proper tendon ends together when multiple tendon lacerations are present.

Extensor tendon lacerations may be repaired at any level, in the fingers, hand, or forearm. If the laceration should be underneath the dorsal carpal ligament, then the dorsal carpal ligament should be excised and the tendon repaired. Usually, the tendons on the dorsal aspect of the wrist do not bowstring sufficiently to interfere with function and the removal of the ligament prevents the formation of adhesions to this structure, so that a good range of motion in the finger usually results. The repair of the extensor tendons is most difficult in the fingers, especially over the middle and distal joints of the fingers. The tendon here is quite flat and thin and requires extreme care to get good approximation. The finest of sutures should be used. This is preferably of the nonabsorbable type or of the pull out wire technique, as described by Bunnell.

NERVES

As a general rule, no attempt is made to repair the lacerated nerves on the dorsal aspect of the hand, since the sensory innervation on the dorsal aspect of the hand is not usually functionally important. Sensation on the flexor side of the fingers is, however, very important and whenever possible the nerves should be repaired. In the fingers the nerve ends should be approximated, if it is at all possible, and usually satisfactory repair of these nerves can be done with the expectation that a good return of sensation will result. The nerves are purely sensory at this level and usually a full return of function will be obtained. The same is true of lacerations of the nerves in the palm, except for the motor branches of the median and ulnar nerves. Lacerations of the motor branches of these two nerves, if properly identified, can be sutured and this has been successfully reported by both Bunnell and Boyes, independently. In this situation, where a pure motor nerve is sutured, a reasonably good return of function can be expected. When the repair is made at a later date, however, the duration of time existing between the laceration and the repair will greatly determine the degree of function returning. If the delay has been sufficiently long to allow complete degeneration of the nerve endings, then function probably will not return.

Lacerations of the nerves at the level of the volar carpal ligament, or proximal to this, means that the nerves are mixed and there is no way to identify the sensory and motor components of the nerve. Great care should be taken to try to prevent torsion of the nerve, in the hope that sensory fibers will be approximated to sensory fibers and motor fibers to motor fibers. In the larger nerve trunks, small vessels may be visible on the nerve and serve as useful landmarks in the approximation of the nerves.

It has been recommended by some persons that a delayed repair of the nerve be done, but we feel that in our experience the primary repair serves well in most instances, if the nerve has not been severely traumatized. If the nerve has been severely traumatized, it is best to do a very simple suture to prevent retraction of the nerve and to plan to do a secondary repair of the nerve at four to six weeks after good primary healing of the wound has occurred.

SKIN CLOSURE

In incised or in some lacerated wounds, simple closure of the wounds is possible. This closure is best done using the stainless steel wire technique, as devised by Bunnell. The wire is without reaction in the tissues and the sutures may be left in for the full three weeks, if necessary, without any reaction occurring around the suture material. Wire gives good approximation of the skin and makes it unnecessary to use subcutaneous material.

Tendons, joints, and nerves must not be left exposed; otherwise, necrosis will occur. If a tissue defect is present and a local flap can be swung over to cover a defect in a joint, tendon, or nerve, this

should be done. The donor area can then be split grafted to give adequate closure. The need of proper coverage is great but the limitations of local flaps make the indications for this rather limited. If local flaps should be used, care should be taken so that the blood supply of the flap is not devitalized, so that resulting slough will not lead to a larger wound defect. If tendons, nerves, and joints can be covered with skin and subcutaneous tissue, then the remaining defects can be split grafted. The donor area for this split graft may be the forearm, abdomen, or thigh, depending upon the amount of skin needed. Any of the techniques for removing split skin grafts is acceptable. Whenever split skin grafts are used, it is felt that a stent type of dressing should be used to provide immobility of the graft, so that healing can occur. If the dressing is loose and allowed to slide about on the hand, this may mechanically dislodge the skin graft so that a successful take will not be obtained. The stent dressing, usually using mechanics waste, provides adequate fixation of the graft.

In cases where local flaps cannot be used to cover tendons, nerves, and joints, and these structures and their underlying parts are worth saving, primary flaps may be used to cover the defect. In some cases, small flaps from an adjacent finger may be used to cover the defect with split grafting of the donor area. In many cases, however, the wounds are rather extensive and small flaps such as this do not suffice. In this case, abdominal flaps are the choice and the flap should be so placed that there is no tension on the flap itself or that there is a minimal amount of torsion on the base of the flap. If a large section of skin and subcutaneous tissue is needed, a broad base abdominal flap may be used and the base may be either proximal or distal, depending upon the location of the wound. The fundamentals laid down by many people must be observed, so that the proper proportions between the length and width of the flap are maintained. The flap should always be much wider than it is long, to insure adequate blood supply. In certain instances, the amount of skin needed is small enough to allow a single stage, tube pedicle to be used. In this situation, the technique, as described by Shaw and Payne is used. Immobilization of the arm to the body is necessary when abdominal flaps are used and plaster immobilization is usually necessary. Most abdominal flaps of this type can usually be cut down in three to four weeks. Proper care should be taken, however, to make sure that the blood supply of the flap is adequate. If there is any doubt at all, then delay of the pedicle should be done in stages, to insure the proper preservation of the flap. In general, it can be said that if the flap has been laid down so that it completely covers the defect and there is to be no reverse extension of the flap when it is cut loose, then three to four weeks is sufficient time to allow the complete flap to take in order to detach it.

POSTOPERATIVE DRESSING

The postoperative dressing is extremely important and is essential to protection of the involved damaged parts. Whenever possible, the position of function should be assumed. In this position, the wrist is dorsiflexed and the finger joints are all flexed to a moderate degree. The thumb is in a partially abducted position. This position of function may be used for the postoperative dressing in most tendon injuries in the fingers or palm or for nerve injuries. If the extensor tendons have been damaged, then the fingers will have to be extended to a greater degree, but should not be placed in complete extension under any circumstances. The fingers should be separated with gauze and if there has been extensive damage a pressure dressing of mechanics waste should be used. This affords even application of pressure without constriction. The dressing itself is made stable by the application of plaster splints, which are available in all installations during this modern day. This pressure dressing should be applied very carefully and should be comfortable and not cause any localized increased areas of pressure. This type of pressure dress-

ing is best applied with mechanics waste and gauze, rather than Ace bandages. The pressure can be more accurately controlled with multiple layers of gauze, whereas an Ace bandage sometimes tends to constrict, rather than apply proper pressure.

Continuous and uninterrupted elevation of the hand should be provided for thirty-six to forty-eight hours following the initial injury and its repair. Antibiotics are given and the choice of the antibiotic depends upon the condition of the injury and the probable nature of the contaminant organism. Tetanus antitoxin should be administered, or the toxoid, if prior inoculation has been given. If there is no clinical evidence of infection evident within forty-eight hours, the patient may be allowed to be ambulatory and elevation of the hand may be discontinued.

If nerves and tendons have been lacerated and repaired, three or four weeks of immobilization are necessary in order to allow adequate time for healing of these structures. After this period of time, active motion can be started and this is a graded exercise program and full strength should not be demanded until a period of at least six weeks has elapsed, in order to allow complete healing of the parts. If motor nerves have been severed, corrective splinting should follow the removal of the postoperative dressing. In the case of the ulnar nerve, this splinting should be directed towards preventing hyperextension of the metacarpophalangeal joint. In the case of the median nerve, this splinting should be directed toward holding the thumb in the partially or fully opposed position. The doctor should control the postoperative course of the patient and frequent visits and instruction as to the proper type and amount of exercise should be given. If skilled physical therapy help is available, the patient may be turned over to a physical therapist but the doctor should continue to observe the patient so that no damage will be done by over enthusiastic care.

If fractures are present and have been treated, immobilization will have to be continued, usually for a longer period of three weeks. Adjacent parts should be allowed motion as soon as possible, if they are not injured, so that the entire hand will not become stiffened through disuse. Most fractures, if internally fixed with Kirschner wires, can be allowed motion after four to five weeks, depending upon the location of the fracture and the stability of the fixation agents.

SUMMARY

First aid dressing should be applied to acute injuries as early as possible. This should be sterile dressing, if available.

X-ray examination should be made without disturbing the dressing on the hand, if possible.

Examination of the hand should be done under sterile conditions, preferably in the operating room. This should be done with the patient's full co-operation and determination of motor and sensory damage should be made at this time.

Surgical repair of the damaged hand should be done in the operating room with complete facilities available.

The principles for the repair of nerves and tendons and skin coverage have been presented. Tendons, nerves, and joints must not be left exposed and must be covered with skin and subcutaneous tissue. If primary closure is not obtainable with the normal coverage, then small local flaps may be used, or abdominal flaps become necessary. Split skin grafts may cover parts, other than those mentioned above.

Postoperative dressing should splint in the position of function whenever possible. Pressure dressings should be used to prevent unnecessary edema.

Postoperative immobilization should be continued for three weeks and then followed by a graded program of exercises to restore motion.

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MANAGEMENT OF THE CHILD WITH CONGENITAL HEART DISEASE *

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Rapid advances in surgery for congenital cardiovascular defects have taken the specific diagnostic aspects of this field from the category of a hobby to that of a specialized skill, frequently involving extensive study with an increasingly complex array of laboratory techniques. Despite the progress in methods of diagnosing and treating congenital heart disease, many cases can still be offered only symptomatic therapy: e.g., Eisenmenger's complex, transposition of the great vessels, etc. Other cases may fit into the group of lesions for which definitive surgical therapy is at present embryonic, as for example, the septal defects, while in a considerable number remedial surgery may be offered with some confidence (patent ductus arteriosus, pulmonic stenosis). The busy practitioner, faced suddenly and unexpectedly with a cardiac problem which he suspects is congenital, may wish to have several questions answered:

1. Is this congenital heart disease?
2. Is it amenable to surgical treatment?
3. When should specialized aid be sought?
4. What facilities are available in the state for carrying out specialized diagnostic and therapeutic procedures?
5. How should this child be managed?

1. IS THIS CONGENITAL HEART DISEASE?

This question is in many instances easily answered: e.g., a young child cyanotic since the first few days of life with a loud rough systolic murmur, right ventricular hypertrophy by electrocardiogram, and clear lung fields and a boot-shaped heart by x-ray. Such a child obviously has the tetralogy of Fallot, a congenital lesion. Equally striking is the acyanotic child of small build with frequent respiratory infections, loud systolic murmur since the first few months of life, large heart with increased, pulsating pulmonary vascular markings by fluoroscopy, and hypertrophy of the right or both ventricles by electrocardiogram. Such a child is again obviously the victim of a congenital defect, probably a septal defect, though possibly a patent ductus arteriosus. More difficult to evaluate is the patient with a soft or only moderately intense systolic murmur at the base of the heart, normal build, negative cardiac history, slightly prominent pulmonary artery, normal pulmonary vascular markings, and electrocardiogram slightly suggestive of right ventricular hypertrophy. Such a child may have a small atrial septal defect or may have only a relatively loud functional murmur. This question may not submit to a definite answer until definitive investigative procedures, such as cardiac catheterization, have been carried out, though in instances such as this the answer might be chiefly of academic interest.

2. IS IT AMENABLE TO SURGICAL TREATMENT?

It is now a matter of common knowledge that most patients with patent ductus arteriosus respond well to surgery. Other lesions for which surgery offers the possibility of complete or nearly complete relief are coarctation of the aorta, pulmonary stenosis, and constriction of the trachea and esophagus by vascular rings. The tetralogy of Fallot and most of the other cyanotic lesions in which there is significant pulmonary stenosis can be benefited by the performance of a shunt operation (Blalock-Taussig or Potts-Smith-Gibson). Less well standardized but progressing rapidly is the surgical treatment of atrial septal defect, while lesions such as ventricular septal defect, aortic septal defect, and anomalous entry of the pulmonary veins into the systemic veins or right atrium are theoretically amenable to surgical correction but actually are seldom if ever successfully attacked at present. Such numerically important lesions as Eisenmenger's complex and its

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analogues and complete transposition of the great vessels are still outside the realm of significant surgical aid.

3. WHEN SHOULD SPECIALIZED AID BE SOUGHT?

The answer to this question may be clouded by personal and financial problems when the distance at which such aid must be sought is significant. In such instances, when the child is doing well, the consultation may be arranged at the convenience of the parents and physician. However, certain situations demand rapid action, especially in regard to very small infants: enlarging heart, increasing cyanosis, syncopal episodes in a cyanotic child, onset of cardiac failure, or failure of a small infant to do well as reflected by poor appetite, poor weight gain, dyspnea, frequent respiratory infections, etc.

4. WHAT FACILITIES ARE AVAILABLE?

Physiologic investigations of congenital heart disease by the techniques of cardiac catheterization, arterial puncture, and angiocardiography have been carried on at Charity Hospital since 1948. Reports of some of these activities have been previously given before this group.[1, 2] These activities have been continued at an increasing rate and with continuing refinement of equipment and technique.

The technique of cardiac catheterization consists of intubating a peripheral vein with a specially constructed catheter and passing it distally along the venous channels to the heart. Ordinarily, the catheter will traverse the right atrium, right ventricle, and pulmonary artery and, in the presence of abnormal communications, may also take other routes: e.g., through an atrial septal defect into the left atrium, left ventricle, and pulmonary veins, or through a patent ductus arteriosus into the aorta. Blood samples are removed from various portions of the heart and great vessels and are compared by oxygen content with each other and with samples removed simultaneously from an indwelling needle in a peripheral artery. Direct pressure recordings are also made through the catheter and these may be compared with direct pressure measurements recorded simultaneously from the peripheral artery.

Information of diagnostic significance may thus be gained in several ways: (1) passage of the catheter through a defect; (2) comparison of oxygen contents of blood samples removed from different parts of the heart: e.g., increased oxygen content of blood removed from the right ventricle contrasted with blood removed from the right atrium suggests a ventricular septal defect with shunt of oxygenated blood from the high pressure left ventricle into the low pressure right ventricle; (3) abnormalities of pressure such as low pressure in the pulmonary artery and high pressure in the right ventricle, demonstrating pulmonary stenosis. Consideration of the oxygen saturation of blood removed from the peripheral artery, either alone or in conjunction with samples removed from the heart at cardiac catheterization, may render valuable information about cardiac and pulmonary function. Unsaturation of arterial blood of a degree insufficient to produce visible cyanosis can be readily detected by this technique.

Angiocardiography with present equipment is of less value in children, especially in infants, than in adults. Injection of radiopaque material into a peripheral vein may help to outline cardiovascular abnormalities as the dye moves through the heart. Retrograde aortography—the roentgenographic visualization of dye injected into the aorta via a carotid or brachial artery—may be successful in outlining coarctation of the aorta or demonstrating a patent ductus arteriosus by filling the pulmonary vascular tree through the abnormal vessel.

During the past year, 289 physiologic studies have been carried out on 170 different patients in the Heart Station at Charity Hospital. The subjects of these studies ranged in age from 4 days to more than 60 years. The most frequently demonstrated lesions have been patent ductus arteriosus, tetralogy of Fallot, and pulmonic stenosis with intact ventricular septum. Nearly one-half of all the patients

studied were found to have one of these lesions. The great majority of these were subjected to ameliorative surgical procedures. A wide variety of additional malformations has also been encountered, some of which were amenable to surgery.

5. MANAGEMENT OF THE CHILD

Although each child presents an individual problem, some general rules may be helpful in outlining a program for the afflicted patient. Probably the most important of these is that the physician and the family should rarely, if ever, attempt to set up the limits of activity allowed the child. The homeostatic mechanisms of the child are far more accurate than any that can be devised by physician, nurse, or family. For example, one child with Fallot's tetralogy may be able to do no more than walk a few steps while another may be as little handicapped as one of our patients, a prize-fighter who began to get a little short of breath after 6 rounds. A second important principle is that the child with congenital heart disease must be protected against bacteremia because of the possibility of development of subacute bacterial endocarditis. This principle involves early and vigorous therapy of infections, and prophylactic antibiotic treatment of situations in which a bacteremia may occur, such as when dental prophylaxis or therapy is administered. Third, supportive therapy must be exhibited when necessary. Digitalis may restore compensation in a heart which has failed from the severe strain of a large left-to-right shunt. Mercurial diuretics may enhance or replace the action of digitalis. The child with the tetralogy of Fallot will not exhibit failure but may develop episodes of severe cyanosis, dyspnea, and even syncope which are best treated with morphine in a dose of 1 mg. per 10 lbs. body weight. Oxygen in this situation cannot be expected to afford any marked relief since administration of even 100 per cent oxygen will result in only minor improvement of the saturation of the arterial blood. Nevertheless in such critical instances even the slight help which can be obtained in this manner should be welcomed.

The optimal time for definitive surgical therapy must be established for each child individually by weighing the technical difficulties and possible poor results of surgery in a small child against the urgency of the immediate situation. The exact time for each child can be established only by repeated observations of the child's progress and condition. Lastly, everyone connected with the care of the child—parents, physicians and teachers—must concentrate on preserving a normal cheerful outlook for the child and avoiding the establishment of a cardiac neurosis. This means treating the child, insofar as possible, in the same manner as his peers. Specifically the child must be allowed to limit his own activity, must not be overprotected, must be allowed to attend regular school if possible, and must be protected against repeated well intentioned admonitions to "Remember your heart".

SUMMARY

In summary, the range of severity of congenital heart lesions is enormous and this factor complicates the handling of a situation already protean in its manifestations. Either the cyanotic or acyanotic type of defect may be associated with very mild manifestations and requires only the usual good medical supervision needed by all children. Conversely either type of lesion may be associated with such severe symptomatology that death may result in the early months of life. The wise physician will, therefore, keep any child with known congenital heart disease under his close supervision and refer the child to a specialized center for further study upon the least suspicion that all is not going well.

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PROGRESS IN OBSTETRICS *

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In reviewing the literature of the last two years, it cannot be truthfully said that there has been any great change in any obstetrical treatment. However, light has been cast on many controversial subjects and new controversial subjects have arisen to replace them. The physiologists with work of such basic importance have taken a renewed interest in matters obstetrical with many interesting findings. Dieticians, who a few years ago did such fine work in aiding the obstetrician, continue their interest in obstetrical problems, and little doubt exists that their efforts have been largely responsible for the marked drop in incidence of preeclampsia and eclampsia. With anesthesiology coming into maturity as a specialty, numerous contributions related to obstetrics have been made, and the future appears most promising. My purpose in this paper is to bring together information from many sources in a necessarily brief and superficial manner so as to acquaint us with the progress which has been made in obstetrics in the last two years.

PSYCHOTHERAPY IN HABITUAL ABORTION

A most interesting advance in the treatment of habitual aborters has to do with psychotherapy. Repeatedly now, abortion is being recognized as a stress mechanism in itself and may represent a rejection of the repeated pregnancies as well as of motherhood. Almost invariably patients have been told their previous abortions were nature's way of expelling an abnormal pregnancy. While this is a soothing emolument at the time, it often plays right into the hands of a beautiful psychosomatic state regarding subsequent pregnancies. There are numerous statistics in recent literature which show a marked improvement in the handling of habitual abortion cases in which the importance of treating the patient psychotherapeutically has been emphasized. With few exceptions now the recent fad of treating habitual aborters with large doses of stilbesterol and progesterone has been abandoned. I have discontinued the use of these drugs in habitual abortion cases because they have been of no apparent value. Javert suggests a means of handling repeated abortion cases in which his methods consist of preconceptional consultations with the husband, detection, and correction of medical gynecologic and psychologic difficulties, a high citrus and vitamin C diet, a supplement of vitamin K daily, thyroid extract where indicated, psychotherapy and sedatives if desired. He has also interdicted coitus during the entire nine months and his reported figures of successful term deliveries are very impressive. I, too, am impressed with the roll of the psyche in an increasing number of incidences in our field. In many cases I recognize the value of administering psychotherapy but am often at a loss to know just how to approach it, as I am well aware that in doing so I am treading in a very dangerous and explosive field and may very well do more harm than good. We should attempt to increase our knowledge of the psychic response and be prepared at least to know how to avoid psychic trauma.

ABRUPTIO PLACENTA

Fortunately, most of us see very few cases of abruptio placenta, but when they do occur, tragic conclusions are altogether too frequent. In earlier years in dealing with abruptio placenta it was characteristic to consider it only a fetal hazard, but it is becoming increasingly clear that the hazard to the mother is also extremely great. It has been recognized that the degree of maternal shock far outweighs falling blood pressure and that, therefore, there is some other factor at work than fall of blood pressure in producing shock. There is some biologically active material which apparently comes from the site of abruption and is released into the blood stream. This is highly toxic, particularly to the vessels of the adrenal cortex, causing adrenal cortical necrosis and the syn-

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drome described so classically by Sheehan and Moore and today popularly known as Sheehan's disease. The fibrinogen level of the blood stream is extremely low in abruptio. The true cause of afibrinogenemia is unknown, but it is thought to be related to the biochemical activities of substances extractable from decidua and placenta. Page of California has done a great deal of valuable work on this subject, and he thinks that the hemorrhagic syndrome which often results with abruptio placenta is due to a sudden depletion of fibrinogen. This is probably due to the escape of placental or decidual thromboplastin into the maternal circulation which converts prothrombin to thrombin, which in turn converts fibrinogen to fibrin and the latter is deposited spottedly over a very large vascular surface, sometimes producing serious visceral lesions. Duncan Reed and his associates have been treating abruptio placenta very successfully with human fibrinogen fractions, and they emphasize the fact that intrauterine pressure favors the entrance of materials into the maternal venous system, and immediate rupture of the membranes is a logical therapeutic procedure. It has been shown that the longer one delays in rupturing the membranes and delivering the infant, the greater the degree of mortality. It is extremely important to stop the intravenous infusions of products from the placenta and decidua which are so highly toxic to the maternal system, and to do this one should first rupture the membranes and, secondly, effect delivery at the earliest opportunity.

RESUSCITATING THE NEWBORN

We may soon be administering oxygen into the gastrointestinal tract as a means of resuscitating the newborn. The method consists of inserting two catheters into the stomach and pumping oxygen into one of them allowing it to flow out the other. This distends the stomach and intestinal tract, and the baby becomes nice and pink long before respiration starts. This is an interesting bit of work and it remains to be seen whether or not it will prove of any general value.

BREECH DELIVERY

Management of breech deliveries has not materially changed in recent years. The overwhelming attitude most recently reported is one of conservatism. It is repeatedly stressed that a proper evaluation of the pelvis is most important in breech delivery. Breech presentations still occur about 4 per cent of the time, just as they did fifty years ago; but it is gratifying to note that fetal loss is much less than in years gone by. In good clinics today, about 3 per cent mortality is the average reported. It is well to stress the importance of avoiding any sense of panic or undue haste in delivering breeches. A conservative plan would be that the anus should be in full view before any attempt at delivery is made, and then with gentle assisting traction the infant could be delivered to the umbilicus. From the delivery of the umbilicus to the delivery of the mouth, there is about two or two and a half minutes before dangerous fetal anoxia develops. This seems like a very little time, but actually if you will time yourself in your deliveries you will notice that you can easily accomplish a delivery in much less time than this, and far greater harm is done by an excited and hurried type of delivery than by a more deliberate type of gentle traction and pressure. The Piper forcep continues to be an excellent instrument to have available in the event there is any difficulty with the after-coming head. An important thing about breech deliveries to remember is this, in attempting to deliver a breech too early in the progress of labor, you automatically place that infant in a higher mortality category. As in so many aspects of obstetrics, patience is an extreme virtue. Si Ward and his associates of New Orleans have written an excellent review of this subject.

The question of external version has been frequently discussed, and the more conservative attitude toward this procedure is the one generally prevailing. There are not many people who make a big issue of converting breeches into vertex presentations if there is any difficulty in so

doing. The best policy seems to be that around the thirty-second, thirty fourth, or thirty-fifth weeks of pregnancy, if an easy external version can be accomplished without undue pressure and without causing pain to the mother, it should be done; however, you should not fool yourself into thinking that you are doing a great deal, because you must keep in mind that about 20 per cent of the breech presentations that exist at that time of pregnancy would themselves convert to a vertex, and then, too, about 20 per cent of those individuals that you successfully convert by manual means will reconvert into a breech position before delivery time.

MORPHINE

It is interesting to note that after many years of morphine being so much on the forbidden list to find that it is coming back into some degree of popularity as a sedative in certain labor cases. It has been repeatedly observed, and with this I certainly agree, that there is no drug as valuable as morphine to soften a very rigid firm, thick cervix in the course of labor. I, however, do not use morphine if I think delivery is going to occur within three hours because it is certainly true that morphine is a severe respiratory depressant to the infant. We feel a little bit safer now in using morphine as an obstetric sedative in view of the fact there is an available antidote to the respiratory suppressing effect of morphine.

HEART DISEASE

Heart disease and pregnancy continue to be very poor bedfellows. Close cooperation between the obstetrician and the internist in the care of the pregnant cardiac yields the best results. It has been shown that the strain to the maternal circulation is less when the infant is delivered normally than when delivered by cesarean section, and while there is still considerable controversy in the literature relative to the proper anesthesia, most people favor the regional type anesthesia. It appears now that termination of a pregnancy because of heart disease is rarely, if ever, indicated.

CLINICAL AND X-RAY PELVIMETRY

Let's stop fooling ourselves that we can accurately evaluate the capacity of the pelvis by bimanual examination. It has been shown that clinical evaluation of the various internal measurements of the pelvis are grossly inaccurate and that today we cannot honestly say to ourselves that we are giving our patients good preventive obstetrical care unless we are insisting upon an x-ray pelvimetry on all prima gravida. There is no doubt in my mind that the most hazardous diameter of the maternal pelvis is the transverse of the midplane. It is in this diameter that the unknowing obstetrician is likely to find his greatest pitfall because the fetal head is often in view before the progress of the biparietal diameter of the baby's skull is impeded by the narrow midplane of the pelvis. With the baby crowning, the obstetrician is encouraged to believe that the delivery is almost accomplished, he applies forceps and pulls to find no progress. It is under this condition that excessive pressure is applied to the baby's head, damage is often done; and while the delivery is usually accomplished, it may well be that the infant will be stillborn or that irreparable brain damage will have occurred. This is a much more hazardous type of distocia than an inlet type distocia because in an inlet type distocia no one would apply forceps with great force if the baby's head is not engaged after many hours of labor. I do not hesitate to give a patient a trial of labor with a questionable inlet capacity, but a trial of labor with a midplane distocia is approached with a great deal more hesitancy. Do not hesitate to admit failed forceps and to proceed with cesarean delivery when real midplane distocia is encountered. While discussing this subject, I would like to verbalize thoughts that have been in my mind for many years relative to x-ray pelvimetry. While I value my friendship with several radiologists and admire their work greatly and lean heavily upon them for assistance, I cannot help but think that many of them overcharge for x-ray pelvimetry. This is an examination every

prima gravida should have before delivery. And since most couples having their first child are young and, in a business way just getting started, the financial burden of additional expense is great. And considering the volume of business that obstetricians will give radiologists for routine prima gravida x-ray pelvimetry, it would appear to me that a more reasonable fee than now in use should be charged for this examination. If we all make an appeal to our friends in this field, presenting the facts as we see them, we may well expect to find a reduction in fee and, therefore, a more general use of x-ray pelvimetry in all prima gravida.

DIABETES

There is still no clear answer to the management of a diabetic pregnancy. The one thing that rings crystal clear throughout the literature in recent years is the great importance of the early diagnosis and meticulous medical supervision of the diabetes. Most people have apparently abandoned the use of stilbesterol and other hormones in the routine care of the pregnant diabetic. This method, you will recall, was championed by Priscilla White who did an enormous amount of very fine work; but unfortunately, recent years have failed to reproduce her findings. The overall infant mortality continues to run about 20 per cent in pregnant diabetics. Many authors feel that cesarean section delivery should be very generously employed about the eight month of pregnancy, and in so doing the late pregnancy accidents to which diabetics are so prone may be avoided.

X-RAY STIMULATION OF OVARIES AND PITUITARY

One of the most soul-searching questions for obstetricians in our time has arisen over the use of x-ray stimulation of the ovaries and pituitary glands to induce ovulation. I am sure that you are familiar with the most interesting work that has been done in recent years in which it has been shown that with relatively small doses of x-ray over the ovaries and over the pituitary gland, many women who theretofore have not ovulated and have henceforth been unable to conceive can be made to ovulate and conceive. There are thousands of cases on record now of women who have had this type of stimulation, and the effectiveness of this treatment is no longer questioned. I have had several patients who have been married for a number of years, and on sterility work-ups have been found to be anovulatory. After all other means had failed, these women were subjected to stimulation doses over the ovaries and pituitary, and in two of the last three patients that I so treated, the patients became pregnant after the first menstrual period following the irradiation therapy. One of these has delivered a normal baby and the second will soon deliver. These are dramatic and heartening results, but the pleasure of this success is dimmed by warnings from geneticists who tell us that such x-ray stimulation to the gonads produce mutations which will eventually result in abnormalities in the offspring. They warn us that the abnormalities transmitted through the mutant genes may not become apparent for many generations. Fifty or even a hundred generations from now, these undesirable mutant genes will express themselves in some ill-effect to that generation. While there have been many cases followed through to the third generation without any recognizable defect in the children born, the warning of the geneticists still rings clear that harmful effects may occur many generations to come. I believe that we obstetricians will find it difficult to be so morally perfect as to withhold x-ray stimulation to a frustrated and anxious mother who is willing even to risk her own life to bear a child because we may fear some unfavorable mutant gene coming into evidence two or three thousand years from now. Most certainly the stimulus applied by this discussion should be in the direction of having us search for and find some means of stimulating ovulation other than by ionizing irradiation and its resultant mutations.

RH FACTOR

Very little real progress in the Rh problem has been made in the last two or three

years. The most severe form of iso-immunization is induced by transfusion, especially if the transfusion occurs after puberty. Another interesting observation of Levine in the early years of the Rh study to the effect that ABO incompatibility of the mother with her infant protects against Rh iso-immunization has been confirmed, and if sensitization does occur, the disease of the infant is relatively mild. However, ABO incompatibility between mother and child is a mixed blessing in that many of these incompatible pregnancies are lost in the early stages of pregnancy. Almost everyone is now in agreement that the best treatment for erythroblastosis is an early replacement transfusion. Kernicterus is the one severe sequela to erythroblastosis, but early and often repeated replacement transfusions reduces significantly the incident of kernicterus. One point for all of us to keep in mind in dealing with the Rh factor is that a mother may deliver a surviving infant after having lost a previous pregnancy to erythroblastosis. In the face of all the literature to which mothers are subject in their ladies' journals, I find myself frequently reassuring them regarding the Rh factor. I have no doubt that the importance of this has been grossly oversold to the public. In the absence of any previous transfusion iso-immunization, it is very unusual to have any erythroblastotic difficulties in the first two pregnancies, and then in the third pregnancy the chances are only one in twenty that there will be erythroblastosis in the newborn. I believe that many of us in the past have been too severe in advising against future pregnancies in many cases where Rh incompatibility between husband and wife exists. Repeated reassurances is about the only treatment I know in dealing with a pregnancy known to have an Rh incompatibility. A Coombs test should be taken from the blood of all infants born of Rh negative mothers who show iso-immunization, and in the positive cases, immediate replacement transfusion will offer a very high salvage rate for those infants.

CLASSES FOR PREGNANT MOTHERS

No review of obstetrics in recent years would be complete without recognition of the impact of classes for pregnant mothers and their husbands upon the care of the patient in labor. There are no individuals who have had real experience in this field who fail to recognize the value obtained by these methods. Criticism and expressions of impatience with the idea almost invariably come from individuals who are not fully familiar with the program and its effect. Despite the good which has been achieved in so many places with this technique, it seems apparent now that the system known as Natural Childbirth will eventually fade from our vocabulary. This is probably true because it is a very time-consuming program for the doctor, and those individuals getting satisfactory results with sedatives and regional anesthesia find it unnecessary to spend the additional time required by this technique.

SEDATIVES

Demerol, scopolamine, and the barbiturates are the most popular sedatives used during labor. There are some authorities who feel that demerol and the barbiturates should not be combined because they claim that the fetal respiratory suppression will be greater if these two drugs are combined. All of us are deeply appreciative of the amnesic effect of scopolamine. The once popular caudal anesthesia has now largely been abandoned, while the saddle block continues as a strong favorite with many.

CESAREAN SECTION

There has been a gentle increase in cesarean sections in the last few years. This, of course, resulted from liberalizing the indications for cesarean section. There has been a steady, marked increase in the low-cervical cesarean section with a constant decrease in the classical type, while at the same time there has been a rather marked increase in the use of regional anesthesia at the expense of general anesthesia.

As a highlight, for what it may be worth, it has been observed that the umbilical cord twists to the left in 82 per

cent of the cases, to the right in 14 per cent and not at all in 4 per cent. Sex prediction tests which enjoyed such a wide wave of interest within the last two years have now faded into the memories as repeated series have shown them to be very little more accurate than the flip of a coin.

PLACENTA PRAEVIA

The management of placenta praevia cases should be expectant. The initial hemorrhage in most placenta praevia cases is rarely of a serious quantity and does not necessarily call for immediate action being taken. Several weeks of gestation can often be gained, thereby increasing fetal survival rate by this expectant management. Most marginal placenta praevias can and should be delivered normally. These cases can usually be treated safely by simply rupturing the membranes and vaginal delivery.

In conclusion, it may be said that our greatest advance in obstetrics comes with the use of antibiotics and blood transfusions, for through their use more mothers and babies have been saved than by any other advance in the history of obstetrics. Patience is an extreme virtue in dealing with most obstetrical problems, as great harm often results from too early intervention in such problems as breech presentations, occipital posterior positions and placenta praevia. Excellent prenatal care and proper diet continue to prove their worth as reflected in a marked reduction in toxemia. Even though the effectiveness and general use of contraceptive devices have increased markedly, we may take some courage from the fact that the birth rate continues near an all time high and from this accept the challenge for a continuing progress in obstetrics.

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SUITS AGAINST PHYSICIANS FOR ALLEGED MALPRACTICE

The problem of suits against physicians for alleged malpractice has recently increased in Louisiana and constitutes an occupational hazard. It is even greater in many other states over the nation, particularly California. It is stated that more such legal actions have been placed against physicians in the last three years in Louisiana that in the previous fifteen. Lawyers who specialize in such suits have formed a pool of experience and legal data. A book has been written on how a lawyer should proceed in securing higher judgements against doctors.

The situation has many aspects. Three of these are of pressing importance to us at this time. One is the matter of insurance. Some insurance companies are withdrawing from this field; others take only preferred and selected risks. The rates are grouped according to the collective experience of the insuring companies and have increased two to four times over the country in recent years. The premium for average coverage when obtainable is said to be about $700 a year in California.

The increase in suits from whatever causes, brought increasing demand for higher coverage, which in turn made the field more tempting and constituted what is now a vicious circle. Such is the situation generally over the nation.

The position of a member of the Louisiana State Medical Society is fortunate in some respects, but still one which demands that he arrange for his own protection with due care. A blanket policy is not obtainable. Insurance coverage must be provided on an individual basis. The State Society undertakes to furnish legal counsel in those suits which the local society and Medical Defense Committee regard as defensible. Experience in this state and elsewhere has shown that the majority of these suits are not meritoriously founded. In the event that an adverse decision is received by the physician it is here that insurance coverage is a necessity.

The increase in suits has been accompanied by increase in the amount of the judicial awards. The causes of each are related. Prominent among them are the prolonged series of articles containing adverse comments about doctors which have been appearing in the press generally. A certain portion of the public has come to feel that medicine is an exact science and that the physician has the power to arrange the factors so that a perfect result is assured. Additional causes of fantastic awards have been the feeling that the physicians' resources are great and insurance coverage is munificent. In some instances, unfortunately, further causes have been the attitudes of the doctors them-

selves. However, most malpractice suits are filed against physicians who are above the median in experience and standing in their professional community. The devaluation of the dollar is regarded as only a minor element in the magnitude of the awards.

In securing insurance there are two approaches to the problem. One of these as indicated above involves evermounting coverage and premium. This type encourages excessive demand but is adequate when disaster falls. The award however is paid not out of a mysterious insurance fund but out of the pool premiums of the doctors who buy insurance protection. Ultimately, therefore, the expense contributes palpably to the cost of medical care.

The other approach is with smaller insurance coverage and emphasis on a specialized legal defense before, during and after the case reaches the court. For the public and the profession as a group this latter plan has merit. For the individual physician, the former gives security. The two are not entirely mutually exclusive. It is desirable for the profession to work out an adaptation of these plans by which the public interest will be served and also the pressing needs of the individual physician can be met.

Each local society should acquaint itself with the many phases of the problem and contrive to increase its collective protection through a legal defense committee. This committee should proceed to gather information and seek legal advice as soon as threatened action is apparent. In such a manner our legal counsel can be of assistance while all the facts are fresh in the minds of those concerned and the whole matter sufficiently fluid to be guided.

In an essay at the recent meeting of the American Medical Association, Dr. Louis J. Regan of Los Angeles, lists five situations in which the patient is likely to file a malpractice suit. These are:

1. When the patient is urged to sue by relatives or friends who are doctors, lawyers, or nurses.
2. When doctors sue to collect bills and the patient is unhappy with the treatment he received.
3. When the patients were "surprised and shocked" at the size of the fee asked.
4. When the patient resented being kept waiting in the office or otherwise felt he was imposed upon.
5. When "there has been criticism by some physician of the treating physician's care of the case or the results obtained".

This last Dr. L. A. Regan said, was more often the cause of suits than any of the others.

Since these are the situations leading to suits, how are they to be avoided? It is to be emphasized that no physician is immune. If the physician must be constantly apprehensive of suits, shortly and inevitably, his own aggressive instincts will suffer as will his professional and humanitarian motivations. Mistrust cannot long remain unilateral.

The physician starts in his relation to the patient in a favorable position and it is largely up to him to see that it is maintained, although the situation as a group is not as good as it was fifty or even twenty-five years ago. The public feels that the doctor should be an upright man, instructed in the art of healing, and further regards him as "a dedicated person, gentle, kind, always available, possessing endless charity and inexhaustible patience, and everlastingly resourceful."

Obviously when a suit occurs such an idealization has been destroyed and the goodwill of the patient has turned to resentment. To prevent such happenings requires the conscious attention and striving of the physician. The patient should be brought to recognize the doctor's sincere and intelligent interest in his welfare. The doctor should keep abreast with the adequate standards in his field of practice and stay within his field. He should cooperate in securing consultations. He should arrange written consent for operations in every instance and give no guar-

antees. Needless to say, he should be ever courteous and tactful. He must know and take advantage of every possible self-protecting measure.

Such admonitions it may be said are the counsel of perfection—by the same token however it is the measure of the physician's protection for himself.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

DR. HARRISON HONORED

Dr. Roy B. Harrison, one of our most distinguished and outstanding physicians for the past forty-two years was signally honored by the Louisiana State Medical Society at its 1954 Annual Session in New Orleans when he was presented a beautiful silver plaque extolling him for his many services to the State Society and the citizens of our State. Dr. Harrison has served the members of the medical profession and the people of Louisiana, with distinction and honor, and merits their commendation and thanks for the wonderful manner in which he has acquitted himself throughout the many years in which he has worked to elevate the medical profession and keep the medical services rendered our people on the highest possible plane.

Dr. Harrison graduated from Tulane University Medical School in 1912 and was licensed to practice the same year. He served as an intern at Charity Hospital in New Orleans 1910-1912; was Instructor in Surgery at Tulane 1912-25; Professor of Clinical Surgery at L.S.U., 1931-35; Senior Visiting Surgeon at Presbyterian Hospital 1912-15 and Associate Chief Surgeon 1918-24; Senior Member, Southern Baptist Hospital Staff since its formation in 1927, and President of the Staff 1934-35; Fellow of the American College of Surgeons since 1929 and certified by the American Board of Surgery in 1937.

Dr. Harrison was honored with the Presidency of the Louisiana State Medical Society and served in this capacity from 1932-1933. He was chairman of the Public Policy and Legislation Committees of the Orleans Parish and Louisiana State Medical Societies for many years and rendered unexcelled service to these societies and to our people in opposing all legislation detrimental to organized medicine.

In his capacity as Secretary-Treasurer of the Louisiana State Board of Medical Examiners, from 1921-1953, he was instrumental and played a very important part in keeping the practice of medicine in Louisiana in the hands of M.D.'s, where it belongs, and he was always found fighting to keep cultists and quackery out of our State. The lay citizens of this State, as well as all physicians, will be forever grateful to him for this great service to humanity.

Dr. Harrison was President of the Federation of State Medical Boards of the United States in 1935. He was a member of the National Board of Medical Examiners from 1942-1953 and a member of its Executive Board from 1946 to the present time. He also served as a member of the Advisory Council on Medical Education of the American Medical Association.

Dr. Harrison was the first President of the Surgical Association of Louisiana of which he was co-founder and organizer in 1947-1948.

Dr. Harrison has been and is still one of the great medical leaders in Louisiana and is loved and respected by his col-

leagues for all that he is—a good citizen, a great doctor and a true friend of organized medicine.

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STATE LEGISLATION

On the whole, we feel that our legislative program, in spite of some defeat, was most successful; in fact far more successful than many of our colleagues predicted. Admitting it to have been a hard legislative year, we were most fortunate in defeating three chiropractic bills and the Constitutional Amendment to the Code of Medical Practice which would have declared that the practice of chiropractic is not the practice of medicine. If this amendment had passed, the chiropractors and all other cultists would have been at liberty to practice the healing arts in Louisiana without any restrictions whatsoever. We are very thankful and grateful to those legislators who joined with the medical profession in defeating these bills and amendments, thereby protecting our people in seeing that they continue to get the highest possible grade of medical care, which they most assuredly deserve.

We should begin building our fences now for the fight which will surely face us in 1956. Now is the time to educate the public and to advise and consult with our legislators on all subjects vital to organized medicine and our people. We will be derelict in our duty as physicians if we fail to continue the fight for the good citizens of our State. Let us all unite as one in this fight. "In union there is strength".

It is now press time and too late to give you a complete resumé of legislation passed and defeated at the 1954 session of the legislature. Read the next issue of The Journal.

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REPORT ON ACTIONS OF THE HOUSE OF DELEGATES AMERICAN MEDICAL ASSOCIATION 103rd ANNUAL MEETING JUNE 21-25, 1954 SAN FRANCISCO

SAN FRANCISCO, June 25—Fee splitting, osteopathy, closed panel medical care plans, veterans' medical care and the training of foreign medical school graduates were among the major subjects of discussion and action during the sessions of the House of Delegates at the American Medical Association's 103rd Annual Meeting June 21-25 in San Francisco.

Named as president-elect for the coming year was Dr. Elmer Hess of Erie, Pa., who, until his election, was serving as a member of the House of Delegates and as Chairman of the Council on Medical Service. Dr. Hess will become president of the American Medical Association at the June, 1955, meeting in Atlantic City, succeeding Dr. Walter B. Martin of Norfolk, Va. Dr. Martin took office at the Tuesday evening inaugural session in San Francisco's Palace Hotel.

The House of Delegates voted the 1954 Distinguished Service Award of the American Medical Association to Dr. William Wayne Babcock of Philadelphia for his outstanding contributions to medicine and humanity. Dr. Babcock, who was professor of surgery and clinical surgery at Temple University School of Medicine from 1903 to 1944, received the award from Dr. Martin at the Tuesday evening inaugural ceremony.

The final registration total for the San Francisco meeting was expected to reach approximately 35,000, including more than 12,000 physicians.

Fee Splitting

The House adopted a supplementary report of the Reference Committee on Miscellaneous Business which recommended acceptance of a Judicial Council report on the subject of billing and made the additional recommendation "that the House of Delegates resolve that it firmly opposes fee splitting, rebating or payment of commissions in any guise whatsoever, and that it further opposes any mechanism that encourages this practice."

The Judicial Council report included the following statements:

"The Judicial Council is of the opinion that the only new facet concerning this subject that has come up recently is the

case of joint billing to some of the nonprofit insurance companies. In many cases these insurance companies insist on a joint or combined bill, but the bill is being paid in most instances by two checks. This is not considered unethical and all insurance plans which do not pay the individual physician in this manner should be urged to do so.

"The Judicial Council is still of the opinion that when two or more physicians actually and in person render service to one patient they should render separate bills.

"There are cases, however, where the patient may make a specific request to one of the physicians attending him that one bill be rendered for the entire services. Should this occur it is considered to be ethical if the physician from whom the bill is requested renders an itemized bill setting forth the services rendered by each physician and the fees charged. The amount of the fee charged should be paid directly to the individual physicians who rendered the services in question.

"Under no circumstances shall it be considered ethical for the physician to submit joint bills unless the patient specifically requests it and unless the services were actually rendered by the physicians as set out in the bill."

Osteopathy and Medicine

Four resolutions dealing with the osteopathic problem were considered. The House accepted a recommendation by the Reference Committee on Medical Education and Hospitals and adopted a Supplementary Report of the Board of Trustees on a Report of the Committee for the Study of Relations Between Osteopathy and Medicine:

"The justification or lack of justification of the 'cultist' appellation of modern osteopathic education could be settled with finality and to the satisfaction of most fair-minded individuals by direct on-campus observation and study of osteopathic schools. The Committee, therefore, proposed to the Conference Committee of the American Osteopathic Association that it obtain permission for the Committee for the Study of Relations between Osteopathy and Medicine to visit schools of osteopathy for this purpose.

"The Conference Committee favorably recommended this proposal to the board of trustees of the American Osteopathic Association which considered it at a special meeting on Feb. 6-7, 1954. It has referred the question to its house of delegates which will act upon the proposal in July, 1954. If the action of the house of delegates of the American Osteopathic Association be favorable, the on-campus observations can be carried out in the fall of this year.

"The Committee therefore recommends:

"1. That no action be taken on the report at this time and that final action be deferred until December, 1954.

"2. That the Committee be continued until December, 1954, in order to be available to evaluate education in schools of osteopathy should the house of delegates of the American Osteopathic Association act favorably upon the recommendation of its Conference Committee."

Closed Panel Plans

The much-publicized New York resolution, calling for several changes in the Principles of Medical Ethics relative to participation in closed panel medical care plans, was considered by the Reference Committee on Miscellaneous Business. That committee made the following recommendation, which was adopted by the House:

"In the discussion before your reference committee on this resolution, it became apparent to the committee that clarification and interpretation of the Principles of Medical Ethics in relation to prepaid medical care plans are desirable. As set forth in the bylaws, the Judicial Council has jurisdiction on all questions of medical ethics.

"Therefore, your reference committee recommends that the House of Delegates request the Judicial Council to . . . investigate the relations of physicians to prepaid medical care plans and render such

interpretations of the Principles of Medical Ethics as the Council deems necessary, and report to the House of Delegates not later than the next annual meeting of the Association.

"The committee further recommends that the New York resolution be referred to the Judicial Council for consideration in connection with this investigation."

The New York resolution, among other suggested changes, would add the following new paragraph to Chapter I, Sec. 4, "Advertising," of the Principles of Medical Ethics:

"It should be understood that any medical care plan, company, or organization which advertises for subscribers and directs such subscribers to a restricted panel of physicians for medical care is advertising for the benefit of the physicians involved."

Veterans' Medical Care

Accepting a report by the Reference Committee on Legislation and Public Relations, the House adopted two strong resolutions condemning the present practice of establishing service-connection for veterans' disabilities by legislative fiat. In recommending passage of both resolutions, the committee said:

"The study of the chronological expansion by law and regulation, together with evidence presented of pending legislation now before a Congressional Committee, emphasize all too clearly the imperative need of decisive action on the part of the American Medical Association.

"It is the opinion of the Committee that the time is at hand when the American Medical Association and its component societies should go all out in preventing this unscientific method of determination of service-connected disabilities, and that we respectfully request that copies of these resolutions be transmitted to the Congress of the United States and other appropriate federal agencies."

In connection with veterans' medical care, the House also adopted recommendations by the Reference Committee on Insurance and Medical Service which reaffirmed the policy on non-service-connected disabilities, established at the 1953 annual meeting, and which commended the informational program carried out since then by the Committee on Federal Medical Services of the Council on Medical Service.

Foreign Medical Graduates

Three resolutions and a Board of Trustees supplementary report were submitted to the House regarding the evaluation of foreign medical school graduates, a subject which attracted major interest earlier this year at the annual Congress on Medical Education and Licensure in Chicago. The Reference Committee on Medical Education and Hospitals spent much of its time listening to the ideas and proposals of various state medical societies, state licensing boards, members of the Council on Medical Education and Hospitals and others. The reference committee recommended that "the intent and aims of this Supplementary Report and the three resolutions can best be met by referring the entire problem to the Council on Medical Education and Hospitals for further study. It is recommended that the Council report at the Interim Session in 1954 regarding the progress relative to this study." The House adopted the reference committee's recommendations.

Seal of Acceptance

The Council on Medical Service presented a supplementary report outlining the difficulties encountered in conducting the Seal of Acceptance program, and recommending discontinuance of the Seal of Acceptance for voluntary health insurance plans. The report said that the standards and principles of the program will be maintained as guides and recommendations for all groups operating or establishing plans. The House, on recommendation of the Reference Committee on Insurance and Medical Service, adopted the Council report, thus terminating the Seal of Acceptance program for voluntary health insurance plans.

Registration of Hospitals

The House also approved a Board of

Trustees report calling for discontinuation of the registration of hospitals by the Council on Medical Education and Hospitals and suggesting that the Joint Commission on the Accreditation of Hospitals be requested to undertake the registration of hospitals in addition to its present accreditation activities.

Miscellaneous

Among a wide variety of other actions, the House also:

Voted to continue the holding of the annual Clinical Meetings;

Approved the establishment of a program of medical military scholarships with appropriate safeguards limiting the number of students involved;

Approved the extension, on a voluntary basis, of the Medical Education for National Defense program which currently is in operation in five medical schools as a pilot study, and

Authorized the Council on Scientific Assembly to conduct a thorough study of the use of tape recordings of the material presented at meetings of the Council, and asked for a report at the December meeting.

Opening Session

Highlights of the opening House session on Monday were selection of Dr. Babcock as recipient of the Distinguished Service Award and the addresses by Dr. Edward J. McCormick of Toledo, then president of the Association, and Dr. Martin, then president-elect.

Dr. McCormick called upon the medical profession to take the guess work out of medical costs by adopting average fee schedules on an area or regional basis. The Reference Committee on Reports of Officers later suggested that the Board of Trustees make a study of such programs where they already are in operation, and the House approved.

Dr. Martin, in his opening session address, declared that the most urgent problem before the medical profession is that of financing hospital services to make them more generally accessible. In his presidential inaugural address, Dr. Martin said that physicians are duty-bound to keep themselves informed on public matters affecting the medical welfare of the people, and he also urged doctors to "reach back farther than the disease" in treating their patients.

Special Citations

Two special citations were presented by the Association during the San Francisco meeting. During the presidential inauguration ceremony Dr. McCormick presented an award to a fellow Toledoan, Dr. Nicholas P. Dallis, for his outstanding health educational service as the writing member of the team that produces the illustrated feature, "Rex Morgan, M.D." At the closing House session on Thursday, Dr. Martin presented a special citation to Smith, Kline & French Laboratories of Philadelphia for "pioneering use of television in bettering the health of the nation." The plaque was accepted for the company by Mr. Francis Boyer, president.

The closing session also brought the announcement that the California Medical Association had presented a check for $100,000 to the American Medical Education Foundation.

Election of Officers

The election at the closing session brought the following results, in addition to the selection of Dr. Hess as president-elect:

Dr. Clark Bailey of Harlan, Ky., was named vice president.

Dr. David B. Allman of Atlantic City and Dr. F. J. L. Blasingame of Wharton, Texas, were reelected to their positions on the Board of Trustees.

Also reelected were Dr. George F. Lull of Chicago, secretary; Dr. J. J. Moore of Chicago, treasurer; Dr. James R. Reuling of Bayside, N.Y., speaker of the House of Delegates, and Dr. Vincent Askey of Los Angeles, vice speaker.

Dr. J. Morrison Hutcheson of Richmond, Va., was named by Dr. Martin as a member of the Judicial Council to succeed Dr. Edward R. Cunniffe of New York, who served as Council chairman for

many years. Dr. Homer Pearson of Miami, Fla., was elected new chairman.

Dr. W. Andrew Bunten of Cheyenne, Wyo., was elected a new member of the Council on Medical Education and Hospitals, succeeding Dr. W. L. Pressly of Due West, S. C. Dr. Charles T. Stone, Sr., of Galveston, Texas, was reelected to the same Council. Both terms run to 1959.

Dr. Floyd S. Winslow of Rochester, N.Y., was reelected to the Council on Constitution and By-Laws for a term ending in 1959.

Dr. Joseph D. McCarthy of Omaha, Neb., was reelected to the Council on Medical Service for another term running to 1959. To fill the vacancy created on the same Council by Dr. Hess' resignation following his election as president-elect, Dr. Robert L. Novy of Detroit, Mich., was selected.

The House of Delegates also chose New York City as the place for the 1957 annual meeting, San Francisco for 1958 and Atlantic City for 1959. Previously selected were Atlantic City for 1955 and Chicago for 1956. The dates of next year's meeting in Atlantic City are June 6-10.

George F. Lull, M. D.
Secretary-General Manager
American Medical Association

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

AMA PHYSICIAN REGISTRATION

Louisiana was well represented at the recent meeting of the American Medical Association in San Francisco. The following New Orleans physicians registered:

Drs. G. E. Burch, Mannie Mallowitz, W. H. Mannheimer, Gordon McHardy, Emma S. Moss, Evelyn B. Nix, Alton Ochsner, Nelson K. Ordway, C. Thorpe Ray, Philip J. Saleeby, A. Segaloff, Arthur J. Silverman, Irving Singer, Benj. B. Weinstein, James H. Allen, W. P. Gardiner, Paul Getzoff, Philip Pizzolato, John Seabury, Lawrence H. Strug, M. T. Beaman, D. C. Browne, Guy A. Caldwell, C. Grenes Cole, Val H. Fuchs, W. R. Hardy, V. M. Henington, W. A. Knolle, R. J. Muelling, Jr., J. T. Sanders, Meyer D. Teitelbaum, Dorothy J. York, Chas. L. Cox, Nathan Goldstein, C. Gordon Johnson, P. H. Jones, H. L. Kearney, Charles B. Odom, Albert Pavy, Jr., Nathan Polmer, John R. Potter, J. W. Reddoch, Daniel C. Riordan, Bertha N. Wexler, J. W. Burks, Jr., Edgar Burns, Homer J. Dupuy, George S. Ellis, J. Morgan Lyons, Ester E. Anderson, Hulon Lott, Benj. L. Newell, and Neal Owens.

Other Louisiana physicians who registered are: J. H. McClendon, Amite; Gene D. Caldwell, Shreveport; Wm. W. Kyle, Baton Rouge; F. P. Bordelon, Jr., Marksville; Paul F. Cashio, Lacombe; Jerome C. Saltz, Baton Rouge; Harry M. Trifon, Shreveport; Francis J. Vincent, Crowley; Moss M. Bannerman, Baton Rouge; Jerome F. Tanna, Baton Rouge; Dwight S. Danburg, Greenwell Springs; Harry Q. Gahagan, Alexandria; Arthur A. Herold, Shreveport; Jean B. Mantin, Jr., Lake Charles; Albert L. McQuown, Baton Rouge; Wm. J. Norfleet, Shreveport; V. F. Chicola, Alexandria; John C. Hundley, Bastrop; Paul Jackson, Clinton; D. M. Kingsley, Alexandria; Burl B. Lane, Jr., Zachary; Chas. H. Mosely, Jr., Baton Rouge; and Jas. R. Phillips, Baton Rouge.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY, INC.

Applications for certification (American Board of Obstetrics and Gynecology) for the 1955 Part I Examinations are now being accepted. Candi-

dates are urged to make such application sometime in July or August.

All candidates for admission to the Examinations are required to submit with their application, a plain typewritten list of all patients admitted to the hospitals where they practice, for the year preceding their application or the year prior to their request for reopening of their application, with the diagnosis, pathological diagnosis, nature of treatment, and end result.

Application for examination or re-examination, as well as requests for resubmission of case abstracts, must be made to the Secretary prior to October 1, 1954.

Under a change of requirements for the Part I Examination, candidates must submit 20 case abstracts rather than 25 as formerly. Five of these may be from one's residency service.

For further information contact: Robert L. Faulkner, M. D., 2105 Adelbert Road, Cleveland 6, Ohio.

COURSE IN CARDIOVASCULAR DISEASES

A course in "Newer Developments in Cardiovascular Diseases" will be given at The Mount Sinai Hospital, New York, October 11th through 15th, 1954, under the auspices of the American College of Physicians. As the title implies, the recent advances will be stressed. Dr. Arthur M. Master and Dr. Charles K. Friedberg will direct the course and prominent cardiologists and cardiac surgeons will participate.

UROLOGY AWARD

The American Urological Association offers an annual award of $1,000 (first prize of $500, second prize $300 and third prize $200) for essays on the result of some clinical or laboratory research in urology. Competition shall be limited to urologists who have been graduated not more than ten years, and to men in training to become urologists.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Biltmore Hotel, Los Angeles, California, May 16-19, 1955.

For full particulars write the Executive Secretary, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his hands before January 1, 1955.

BOOK REVIEWS

Practical Clinical Chemistry. A Guide for Technicians; by Alma Hiller, Springfield, Ill., Charles C. Thomas, 1953, pp. 266, Price $6.50.

This book has been written for technicians in clinical chemistry departments of hospital laboratories and its purpose has been well achieved. It will not be so useful for another group.

Seldom are the notebooks and procedure outline cards which all laboratories use, anywhere nearly so well-written. A compendium of the methods employed by another laboratory is always useful and the usefulness is multiplied when the methods have been successfully used by, and under the critical eye of, so able a biochemist as Dr. Hiller.

Some of the methods are not the ones most generally used. For amylase, Somogy's method is more generally used than is the one described, Smith and Roe. For chlorides, Whitehorn's and Schales' methods are more used than is Hiller and Van Slyke. Elon is not the most generally used reducing agent for phospho-molybdic acid. And few use the uric acid method of Kern and Stransky. Perhaps if everyone had given these methods as much study as Dr. Hiller has, they would be the ones used.

M. S. Ewing, M. S., M. T.

Thoughts about Life; by Felix Friedberg, New York, Philosophical Library, 1954, Pp. 40, Price $2.50.

Written by a teacher of biochemistry in Howard University, these short essays are interesting and thought-provoking. Subjects included are: Ideation and Reality; Function of a University; Philosophy's Service to the Scientist; A Work of Art; and Characteristic Phenomena of Living Things. The personal philosophy of the author as a teacher is expressed in his statement: "To open the mind and heart of youths, to induce tolerance, fairness and understanding, that is the primary goal of education."

Mary Louise Marshall

Living in Balance; by Frank S. Caprio, Washington, D. C., Arundel Press, Inc. 1952, Pp. 246, Price $3.75.

A lay exposition of the "whys" and "wherefores" of our conduct, interestingly presented. It should be of value in its field.

The author presents his "therefores" for living in balance.

I. L. Robbins, M. D.

PUBLICATIONS RECEIVED

Health Education Council, N. Y.: Beyond the Germ Theory, by Iago Galdston, M. D.

J. B. Lippincott Co., Phila.: New and Nonofficial Remedies (1954), issued by The Council on Pharmacy and Chemistry, American Medical Association.

W. B. Saunders Co., Phila.: Fundamentals of Anesthesia, a publication of the Council on Pharmacy and Chemistry of the American Medical Association (3rd edit.); Practical Fluid Therapy in Pediatrics, by Fontaine S. Hill, M. D.

Charles C Thomas, Publisher, Springfield, Ill.: The Diagnosis and Treatment of the Infertile Female, by Fred A. Simmons, M. D.; The Treatment of the Alcoholic, by Fritz Kant, M. D.

Amebiasis[1] a "Poorly Reported" Disease

Until serious complications arise, amebiasis may pass unrecognized and patients receive only symptomatic treatment.

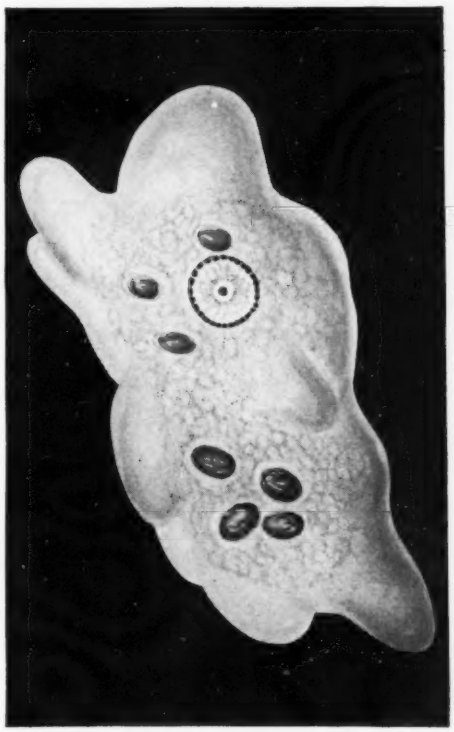
Although amebiasis is a disease with serious morbidity and mortality, statistics on its incidence[1] are incomplete because its manifestations are not commonly recognized and consequently not reported.

"*Vague symptoms*[2] *referable to the gastrointestinal tract, such as indigestion or indefinite abdominal pains, with or without abnormally formed stools, may result from intestinal amebiasis. Not infrequently in cases in which such symptoms are ascribed to psychoneurosis after extensive x-ray studies have been carried out, complete relief is obtained with antiamebic therapy.*"

To prevent possible development of an incapacitating or even fatal illness and to eliminate a reservoir of infection in the community, diagnosing and treating[3] even seemingly healthy "carriers" and those having mild symptoms of amebiasis is advised.

Early diagnosis[1] is important because infection can be rapidly and completely cleared, with the proper choice of drugs and due consideration for the principles of therapy. For treatment of the bowel phase these authors find Diodoquin "most satisfactory."

For chronic amebic infections, Goodwin[4] finds Diodoquin to be one of the best drugs at present available.



Endamoeba histolytica (*trophozoite*).

Diodoquin, which does not inconvenience the patient or interfere with his normal activities, may be used in the treatment of acute or latent forms of amebiasis. If extraintestinal lesions require the use of emetine, Diodoquin may be administered concurrently. It is a well tolerated and relatively nontoxic orally administered amebacide, containing 63.9 per cent of iodine.

Diodoquin (diiodohydroxyquinoline), available in 10-grain (650 mg.) tablets, reduces the course of treatment to twenty days (three tablets daily). Treatment may be repeated or prolonged without serious toxic effect. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.

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1. Hamilton, H. E., and Zavala, D. C.: Amebiasis in Iowa: Diagnosis and Treatment, J. Iowa M. Soc. *42*:1 (Jan.) 1952.

2. Goldman, M. J.: Less Commonly Recognized Clinical Features of Amebiasis, California Med. *76*:266 (April) 1952.

3. Weingarten, M., and Herzig, W. F.: The Clinical Manifestations of Chronic Amebiasis, Rev. Gastroenterol. *20*:667 (Sept.) 1953.

4. Goodwin, L. G.: Review Article: The Chemotherapy of Tropical Disease: Part I. Protozoal Infections, J. Pharm. & Pharmacol. *4*:153 (March) 1952.

pediatric preoperative sedation

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"**A** barbiturate which seems to have a most consistent effect in my experience is NEMBUTAL (*Pentobarbital, Abbott*) . . . administered one hour before operation and morphine sulphate twenty minutes before the patient goes into the operating room.

"If this preoperative medication is followed, the child will not be apprehensive and will often require less than the usual amount of anesthetic . . . one is impressed with the quiet sleep they produce and more impressed with the quiet uneventful recovery and infrequent nausea and vomiting." Abbott

Schaerrer, W. C., J. Missouri M. A., 37:287.

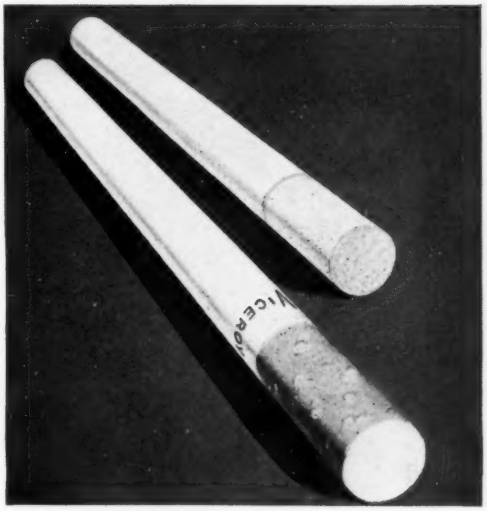
4081882A

DOCTOR, WHEN YOUR PATIENTS ASK...

"Which Cigarette Shall I Choose?"

...REMEMBER THAT NEW VICEROY GIVES SMOKERS

DOUBLE THE FILTERING ACTION!



1. NEW AMAZING FILTER OF ESTRON MATERIAL
This new-type filter, of non-mineral, cellulose-acetate, Estron material, exclusive with Viceroy Cigarettes, represents the latest development in 20 years of Brown & Williamson filter research. Each filter contains 20,000 tiny filter elements that give efficient filtering action; yet smoke is drawn through easily, and flavor is not affected.

2. PLUS KING-SIZE LENGTH
The smoke is also filtered through Viceroy's extra length of rich, costly tobaccos. Thus Viceroy actually gives smokers *double the filtering action* . . . to double the pleasure and contentment of *tobacco at its best!*

ONLY A PENNY OR TWO MORE THAN CIGARETTES WITHOUT FILTERS

New King-Size
Filter Tip **VICEROY**

OUTSELLS ALL OTHER FILTER TIP CIGARETTES COMBINED

To open congested air passages in hay fever

NEO-SYNEPHRINE®

HYDROCHLORIDE

. . . reduces nasal engorgement . . .

promotes aeration . . . encourages drainage

A few drops of Neo-Synephrine 0.25% in each nostril will promptly check mucosal engorgement and hypersecretion, promoting greater breathing comfort over a period of several hours.

The resultant relief to the hay fever sufferer is decidedly gratifying. Prolonged action of Neo-Synephrine makes fewer applications necessary, consequently longer periods of rest and sleep are possible.

Neo-Synephrine does not lose its effectiveness on repeated application and may, therefore, be relied upon to give relief throughout the hay fever season.

Neo-Synephrine is practically free from sting and compensatory congestion; does not appreciably inhibit ciliary activity. Neo-Synephrine has been found relatively free from systemic side effects such as nervous excitation, cardiac reaction or insomnia even when tested on hypertensive, cardiac and hyperthyroid patients.[1]

0.25% Solution (plain and aromatic)

0.5% Solution; 0.25% Spray (unbreakable plastic squeeze bottle)

1% Solution

0.5% water soluble Jelly

1. Van Alyea, O. E., and Donnelly, Allen: *Arch. Otolaryng.*, 49:234, Feb., 1949.

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2. Malleson, J.: Lancet *2*:158 (July 25) 1953.
3. Goldzieher, M. A., and Goldzieher, J. W.: Endocrine Treatment in General Practice, New York, Springer Publishing Company, Inc., 1953, p. 23.

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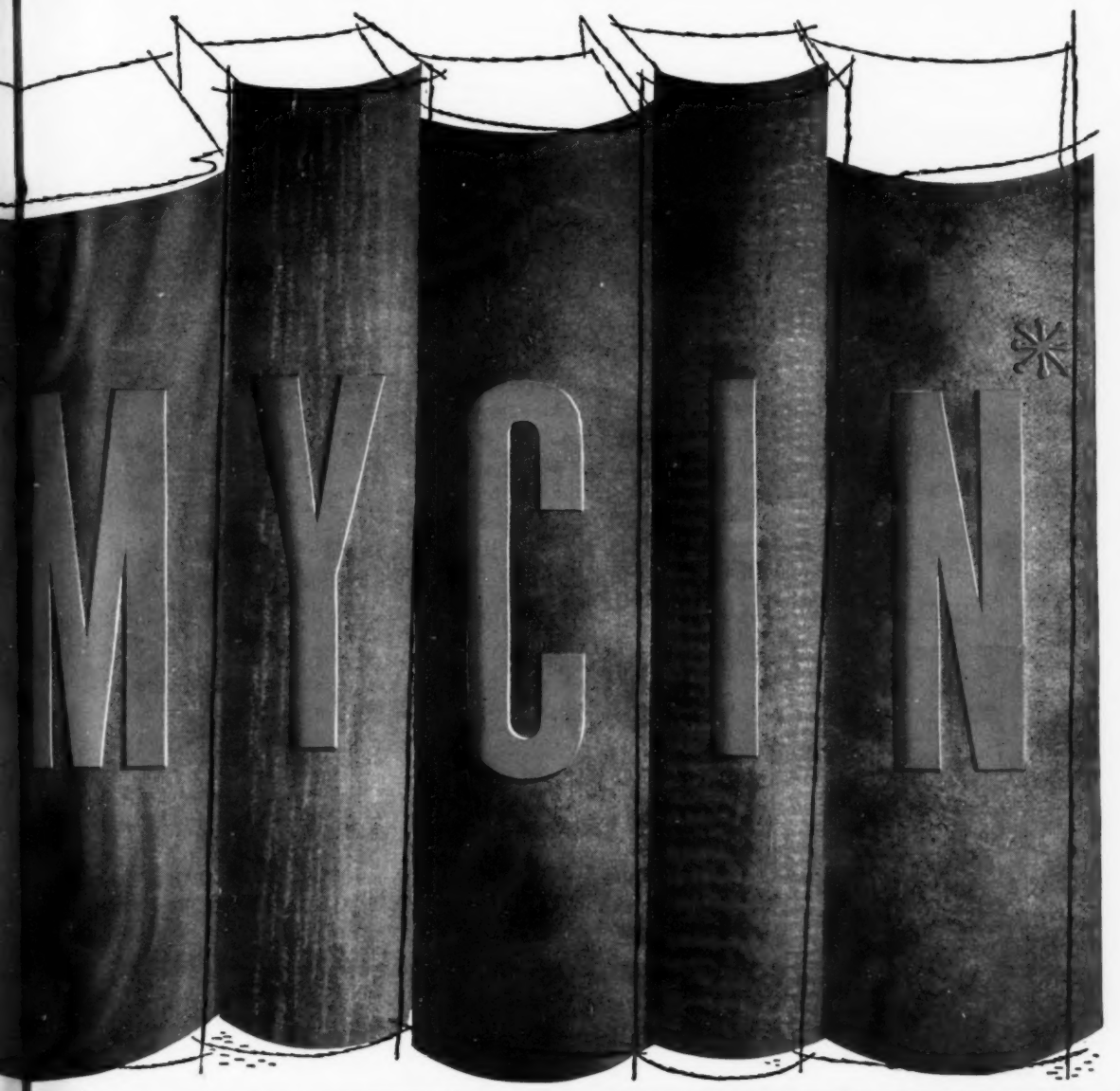

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The Cancer Commission of the Louisiana State Medical Society

"CANCER: A RESEARCH STORY" *

16 mm., color, sound, showing time 28 minutes. Produced in 1953 by Tele-Programs, New York, for the American Cancer Society. Procurable on loan from local units of the American Cancer Society.

This is a documentary film presenting distinguished investigators in five avenues of research. It is narrated by Dr. Charles S. Cameron of the American Cancer Society. Beginning with Mendel's experiments in heredity, Dr. Clarence C. Little explains in location-shooting his work in genetics, which has established the extent of genetic and chromosomal influences on the development of certain animal cancers. From genetics the story then goes to the work in the field of hormones. Dr. Charles Huggins of the University of Chicago demonstrates some of his work in this field. From hormones the next step is to a study of carcinogens. Dr. Lewis F. Fieser, Sheldon Emery Professor of Organic Chemistry at Harvard, explains his work in a study of the structure of chemical compounds that produce cancer and his current work in seeking steroids related to cholesterol formed within the body, which may prove to be cancer producing. Then, chemotherapy is demonstrated by Dr. C. P. Rhoads of the Memorial Cancer Center, New York. Dr. John Bittner, Professor, Division of Cancer Biology, Medical School, University of Minnesota, explains his work in the field of heredity and virology, using his "mouse-milk" factor as proving the existence of a transmissible factor in the milk of mice, which apparently is responsible to some degree, for the development of mammary cancer in his animals. The cycle, as Dr. Cameron explains, is but a short step from the heredity factor to the Mendelian theory.

This is an excellent picture, and it should raise a hope instead of inducing cancerphobia. In addition, it affords the viewer an opportunity to hear about progress in cancer research and the arising hope of cancer cure from the lips of experienced researchers in the field, men whose names are well known internationally. The use of nonprofessional actors lends authenticity to the presentation. As a film production, it is very well done and it can be recommended for lay audiences.

* Reprinted from the
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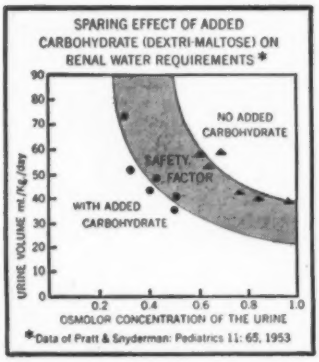

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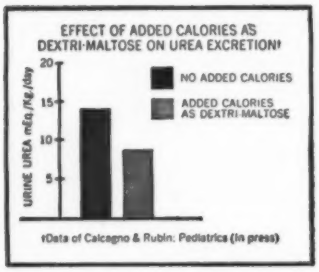

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1. Pratt & Snyderman: Pediatrics 11: 65, 1953; 2. Calcagno & Rubin: Pediatrics (in press); 3. Calcagno, Rubin & Weintraub: J. Clin. Investigation 33: 91, 1954; 4. Cooke, Pratt & Darrow: Yale J. Biol. & Med. 22: 227, 1950; 5. Gamble: J. Pediat. 30: 488, 1947; 6. Rappaport: Am. J. Dis. Child. 74: 682, 1947.

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